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MARCH • 1958

Sectional INDEX

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. . . to Modernize Your Mill with New American Textile Machinery . . . NOW

Today, American textile machines of all types are at an all-time high in adaptability of design . . . versatility of use . . . quality and quantity of production.

Never has any textile mill been able to get so much for so little.

And never has competition been so tough. Never has outdated equipment been such a liability, such an open invitation to diminishing returns.

Yet surveys show that a dangerously high percentage of pre-war equipment is still in use today.

What are you waiting for? The time is right. Prices are right. Terms are right. It's high time to modernize, *now* . . . for the future of *your* mill.

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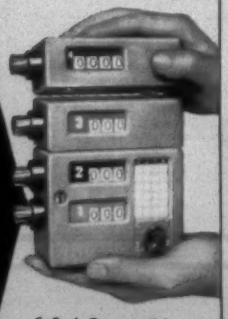
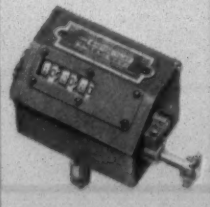
. . . and here's why it's wise to make sure all your New Machines are equipped with NEW VEEDER-ROOT COUNTERS . . .

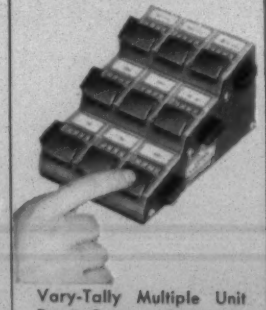
Modern Veeder-Root Counters . . . for looms, frames, knitting machines and all types of textile mill equipment . . . are built with unmatched Veeder-Root know-how and quality to give accurate facts-and-figures through years of trouble-free service. Count on Veeder-Root for *closest* Control of production and uniformity. Write Veeder-Root for all your counter needs.



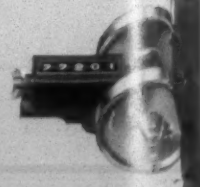
2-3-4 Convertible Counters for looms, frames, knitting machines, etc.



Loom Cut Meters for controlling uniform cuts of cloth.



Vary-Tally Multiple Unit Reset Counters for inventory, inspection, and 1,001 other hand-counting jobs.

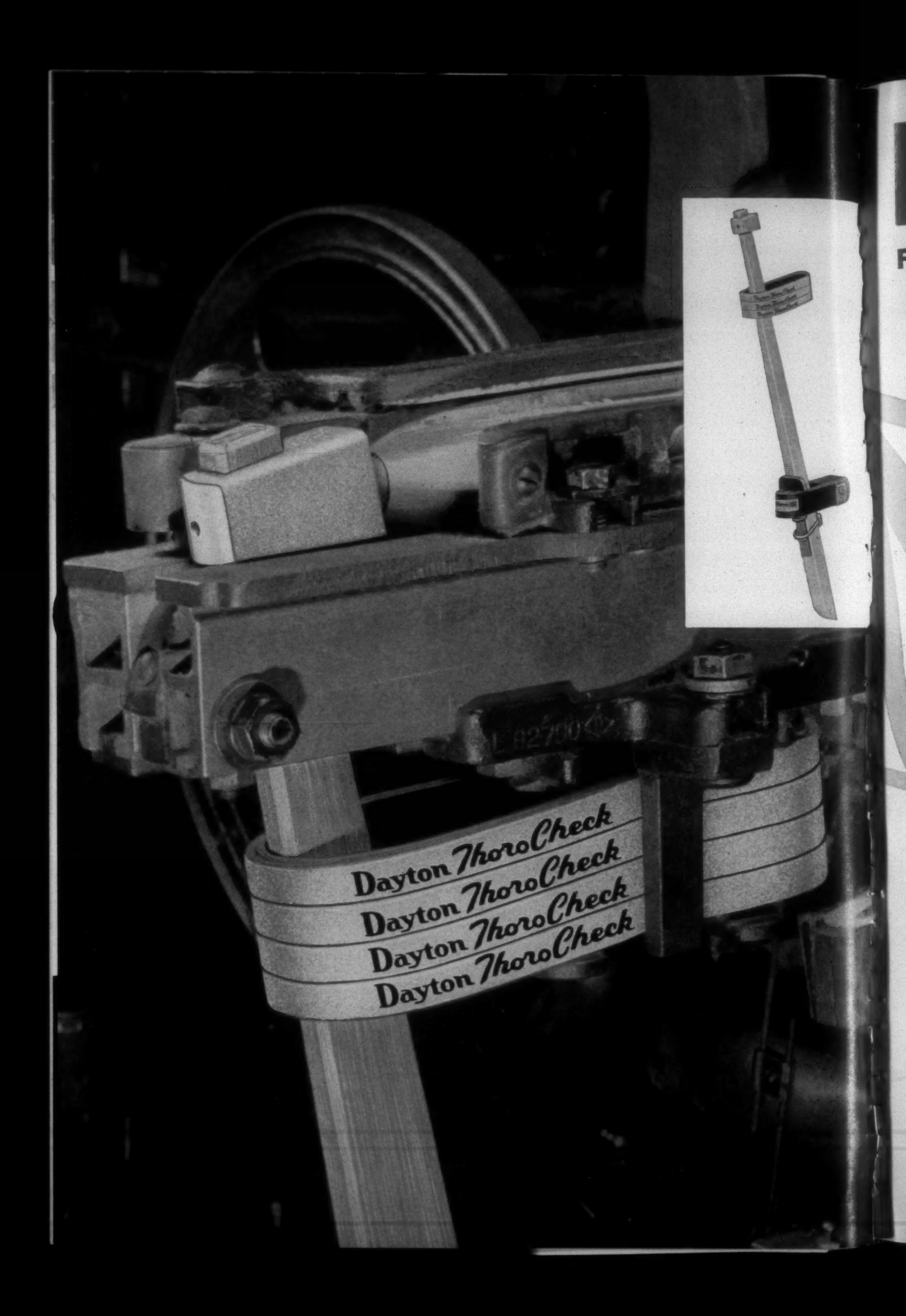


Double-Whee Linea Counter for in icatin lengths in feet, ards,

Penford Gums THE **MODERN** WARP SIZING FOR **MODERN** WEAVING

Penford Gums provide exceptional warp yarn protection in weaving all modern fabrics — Cotton, Worsted, Viscose, Acetate, Nylon, Dacron, Acrilan, Orlon, Dynel, Zefran and blends.

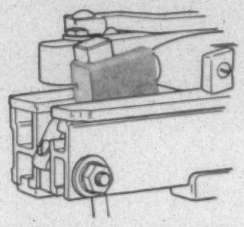
There is a Penford Gum that will fit your warp sizing requirements. Penick & Ford Technical Sales Service Engineers will gladly assist you by recommending exact formulations and will provide continuous technical service. Write us today.


Dayton ThoroCheck
Dayton ThoroCheck
Dayton ThoroCheck
Dayton ThoroCheck

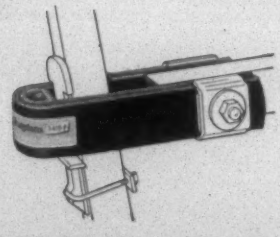
Protect Your Looms

From Shock and Wear with the Dayco Combination

WHY TAKE CHANCES with your looms when you can protect the picking assembly at every point of shock and wear with Dayton Thorobred Loop Pickers, ThoroCheck Straps and Deluxe Lug Straps? Designed to work together as smooth running combination, they absorb the shock of high speed shuttles, smoothly check the picker stick, and accurately deliver the shuttle return. Lasting 2 or 3 times longer than similar products, the Dayco Picking Combination reduces both the cost of replacing parts and the downtime it takes to make repair.

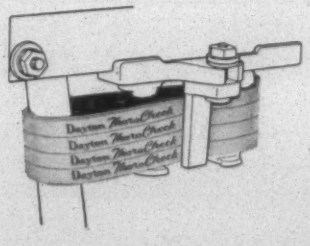


DAYTON THOROBRED LOOP PICKERS are scientifically designed to avoid wear. Examine them point for point . . . the tilt of the picker face is just right for perfect, strain-free shuttle contact . . . the tapered picker stick hole and tapered bottom insure accurate seating and protect against tearing the loop ply . . . and the smooth, round corners prevent jerked-in fillings. It all adds up to millions more wear-free contacts.



DAYTON THROBRED DELUXE LUG STRAPS are molded together around a built-in plug that absorbs the terrific shock generated during picker stick thrusts. This one-piece, link-free construction means longer service and greater protection for the stick and loom.

DAYTON ENDLESS THORO-CHECK STRAPS have a superior checking action and a stronger multi-ply construction that add 6-8 months more of trouble-free service. Because of their smooth, graduated checking action, Dayton ThoroCheck Straps never drag over the stick, never interfere with the shuttle throw.

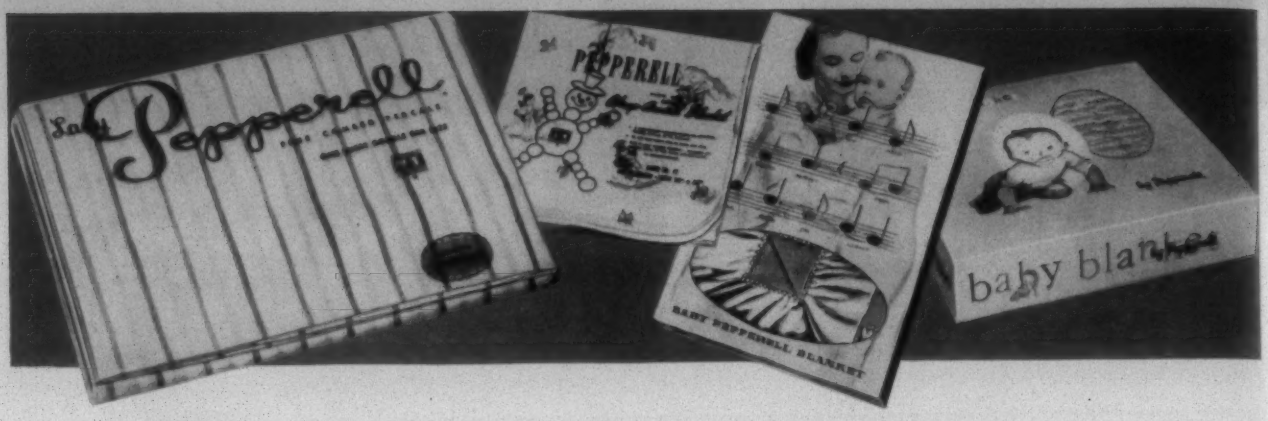


Check the results yourself by refitting some of your looms with the complete Dayton combination and comparing its long life, freedom from downtime, and smoother picking action. Just ask your Dayco representative next time he calls or write The Dayton Rubber Company, Textile Div., 401 S. C. National Bank Building, Greenville, S. C.

Dayton Rubber

Dayco And Thorobred Textile Products For Better Spinning and Weaving

OVERSEAS PLANT: THE DAYTON RUBBER CO., LTD., DUNDEE, SCOTLAND



Together . . . for over 50 years!

Pepperell Manufacturing Company in textiles; American Moistening Company in air conditioning . . . *both* are well-known not only to the trade, but to each other! For it was over 50 years ago that the first Amco installation was made in a Pepperell mill. Moreover, it's a business association which has continued active right up to the present.

Amco's developments in improved methods of air conditioning today include a full list of carefully engineered devices, as well as *all* types of systems. So whether *your* requirements are for humidification alone; or in combination with cooling, such as in a ductless evaporative cooling system; or for a unit dry-duct system; or central station air conditioning . . . Amco can offer you the *right* system, composed of quality components, and based on engineering backed by seventy years experience in textile air conditioning.

Call on Amco for reliable advice. Amco engineers will be glad to suggest a solution to any air conditioning problem you may have. There is absolutely no obligation.

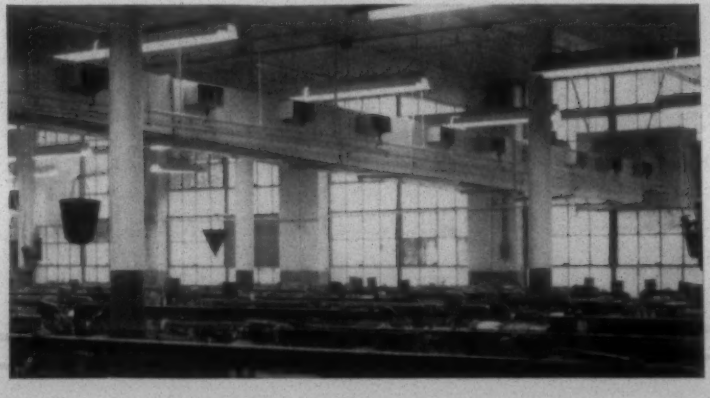
Amco cooling and ventilating installation in spinning room of Pepperell plant.

Some departments in the mill use straight humidification with Amco atomizers.

AMCO

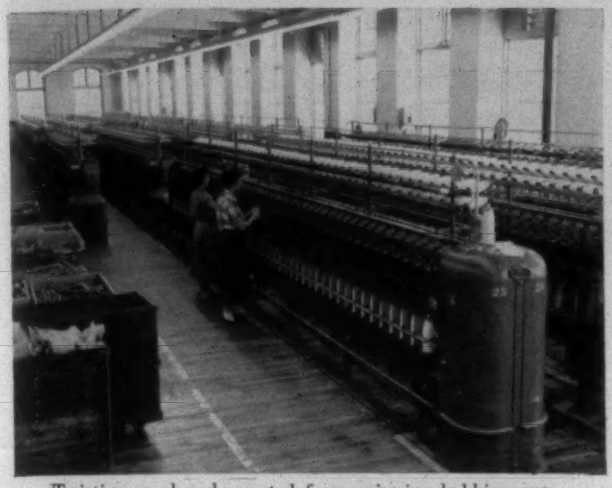
AIR CONDITIONING SYSTEMS

AMERICAN MOISTENING CO. • CLEVELAND, NORTH CAROLINA
BRANCHES:
ATLANTA, GA. • PROVIDENCE, R. I. • TORONTO, ONT.

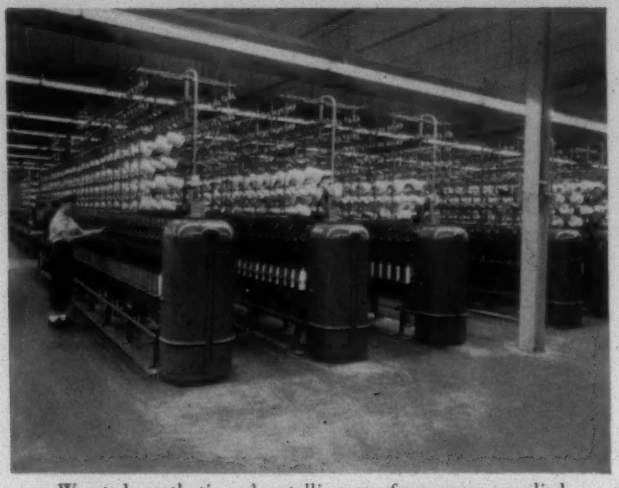


Amco unit dry-duct system installed in weave room.

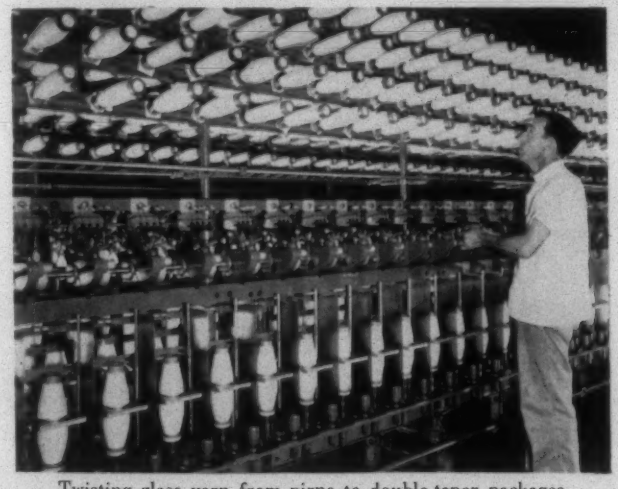
Leesona® Model 10 puts a wonderful twist on any yarn



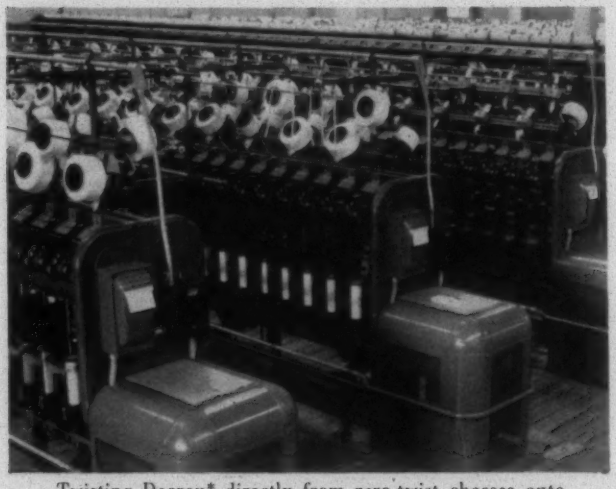
Twisting wool and worsted from spinning bobbins onto taper-top, take-up packages, as supply for winding machines.



Worsted, synthetic and metallic yarns from cones are plied together, twisted and taken up on large packages.



Twisting glass yarn from pirns to double-taper packages which will be used for filling and warping without re-winding.



Twisting Dacron* directly from zero-twist cheeses onto straight wind bobbins for further processing on high speed UNIRAIL® Uptwisters.

The world's best yarns — and all the others too — natural or synthetic — spun or filament can be plied and twisted best on a Leesona Model 10 Ring Twister.

With it you twist single end yarn or combine two to 16 ends, with a twist range of ½ to 55 turns. Automatic stop motion for each end in the ply permits tying knots in singles.

Here's the most versatile of twisting machines ready for any kind of package delivery — cones, cheeses, cakes, pirns, spools, bobbins or tubes. Produces straight wind, taper-top or double tapered take-up packages (filling or warp wind).

For more facts and figures write for Leesona Model 10 Ring Twister Bulletin 10-A.

*Dacron is a DuPont registered trademark.

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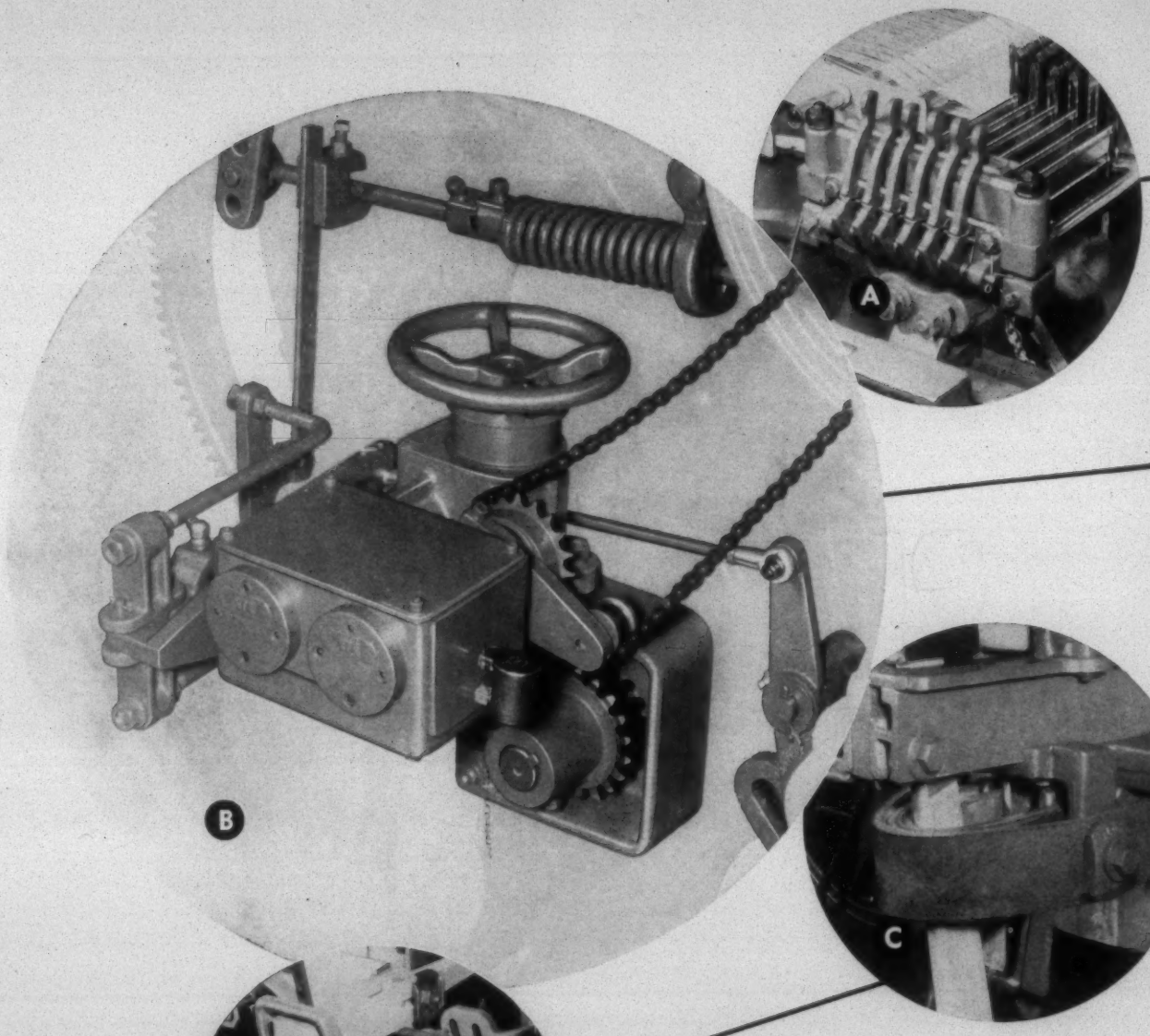
Agents in every principal textile center throughout the world

23.7.6

Proven
Loom Developments . . .



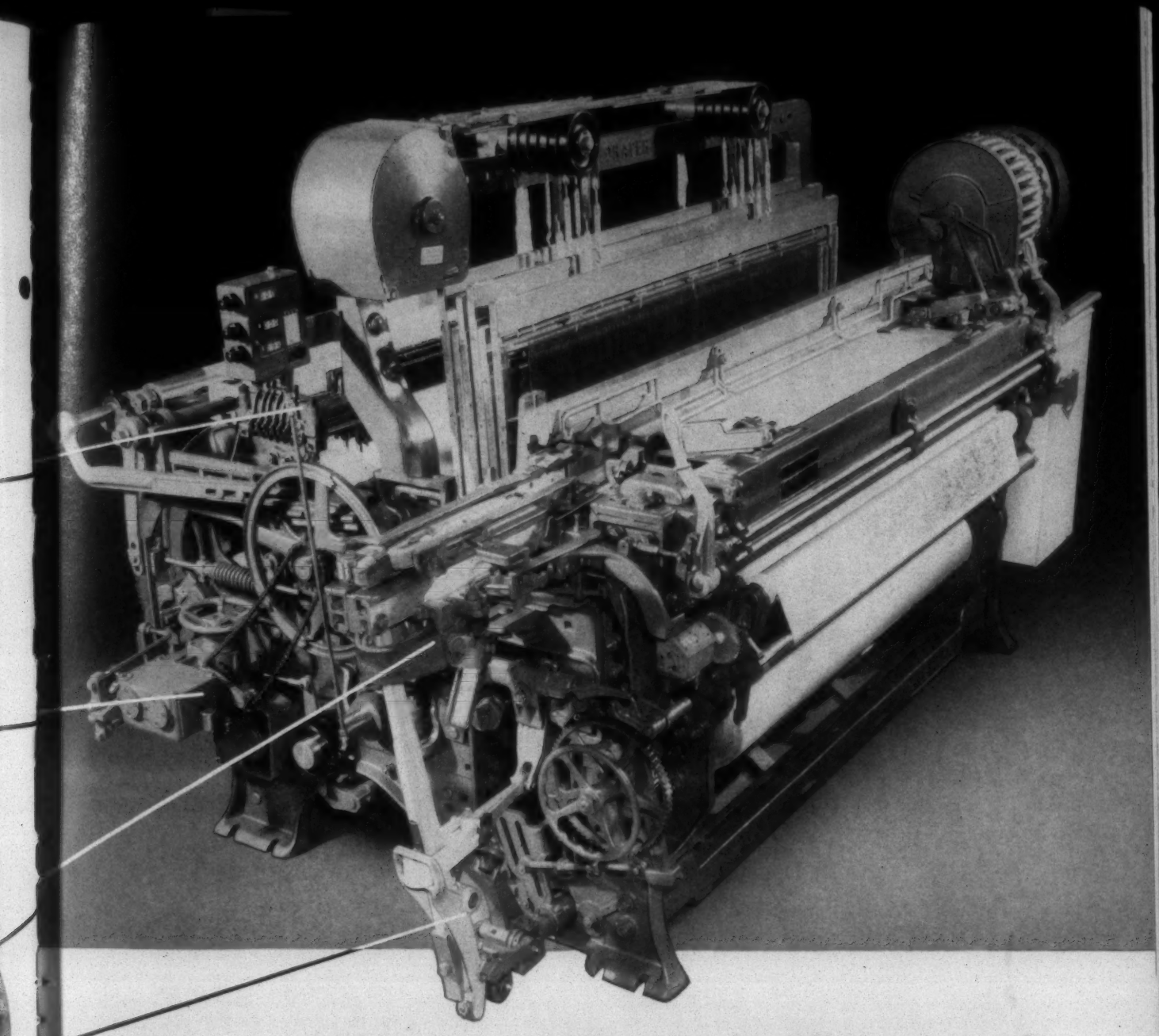
Member of
American Textile Machinery Association

A K-A Electric Warp Stop with Serrated Blade provides a quick, positive means for locating a "down" drop wire.

B Draper Tru-Tension Let-off automatically controls yarn tension from full to empty beam with little or no adjustment needed, once the initial settings are established.

C Draper #14 Shuttle Check improves shuttle boxing. Simplified settings effect labor savings.

D Draper Link Type Parallel gives a uniform, controlled picking action . . . improves loom operation . . . reduces wear on pick motion and parallel parts.



. . increase the versatility and efficiency of the Draper X-2 Model Loom

The Draper X-2 model loom, incorporating many new *tried and proven* loom mechanisms, contributes to greater weave room economy.

The new Tru-Tension Let-off controls yarn tension automatically, from full to empty beam. Cloth defects commonly attributed to the Let-off are eliminated and substantial savings are possible on critical weaves.

Other loom developments, including the Link Type Parallel, #14 Shuttle Check and the K-A Electric Warp Stop with Serrated Blade improve loom performance . . . reduce down time and costly repairs.

These and many other Draper loom attachments combine to increase the versatility and efficiency of the Draper X-2 model loom.

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HOPEDALE, MASS.

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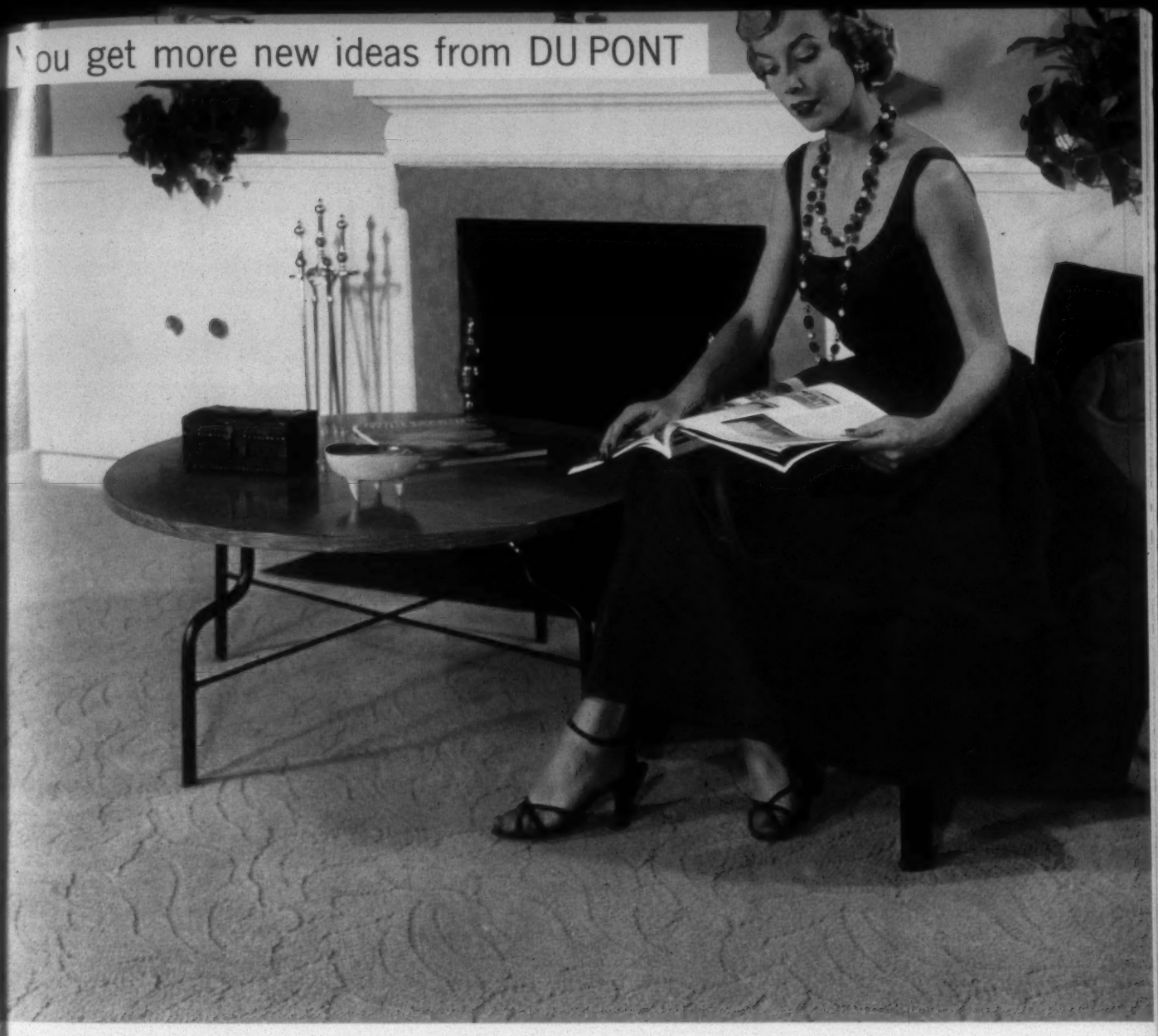


WOOL CARPETS COME BACK IN BLAZE OF GLORY

with help of Du Pont Dyeing Developments

A short time ago wool carpets were losing ground on the basis of quality and economy. But progressive mills fought back by introducing new textures and more efficient production methods. Many of them obtained both simply by adopting the continuous dyeing method developed by Du Pont that not only raised the fastness of the color but also left the wool in better condition. These carpetmakers are now leading the parade as carpets come back in a blaze of glory.

This process case history again shows how you can gain a competitive edge by using Du Pont dyes and dyeing methods. The mills which first adopted this new process were, in turn, the first to enjoy the benefits of continuous wool rawstock dyeing in the scouring train with colorfast "CAPRACYL" dyes.

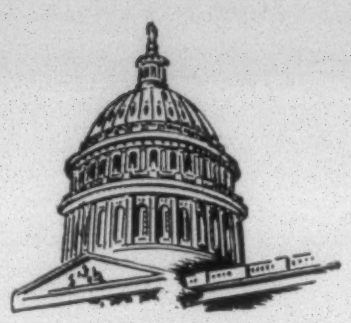
If you'd like to know how Du Pont Dyeing Developments can help you, just write to E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Dyes and Chemicals Division, Wilmington 98, Delaware.

DYES AND CHEMICALS

DU PONT

REG. U. S. PAT. OFF.

Better Things for Better Living
. . . through Chemistry



WATCHING WASHINGTON

[Exclusive and Timely News from the Nation's Capital]

Prospects are not as bright as they were for Congress to continue the 24-year-old "liberal" trade program along the road to more tariff cuts. Opponents believe the law can be amended to give much more protection from imports of foreign competitors, including Japanese textiles, than at any time before. This prospect arises in the volume of unemployment and the business slump. It just does not make sense, many House members say, to sanction an ever-growing volume of foreign competitive products when U. S. workers are being laid off, and plants put on short hours.

The State Department has long been over-generous in opening loopholes in treaties and trade agreements to the inpouring of foreign goods. This is evident in any 5 and 10 cent store. Generally the department's ears have been deaf to pleas to safeguard employment at home, and has made a major trading point in dealing with Communist-leaning countries in allowing larger imports of their products, which were in direct competition with production at home. One result, as Congress sees it, is the need for bigger recession-buffers now.

All the way from lower Broadway to the farms of Kansas there is a feeling the President is over-confident in how soon ailing business will solve its troubles. Many estimates are that the bottom will be reached sometime in the Fall, with a pick-up by Christmas. Grass roots sentiment is that if an upturn comes earlier it will be through vigorous Federal public works grants and a tax cut. Both industry and individuals believe unemployment will continue at a painfully high level for most of the year. The slump can be ended earlier, they believe, only through massive, deficit invoking, Federal intervention.

Much of the ailment, as government economists see it, is in consumers saving and skimping, and waiting for better prices. Installment debt, estimated at $56 billion, is exerting pressure on new spending, and reducing incentives to buy. This tendency in turn is lessening the incentive of business to invest in new plants and new products, and checking an upturn in unemployment.

Pleas for public works to aid unemployment and restore normal buying put a lot of heat into the House discussion of the rivers, harbors and flood control bill in the second week of March. The bill called for $1.4 billion. While it had no relation to the President's recovery proposals, it was described as freighted with recovery aspects. In other years it has been called a "pork barrel." Although not carrying any appropriations, it opens the way for new spending grants of $1,456,637,800, one-third of it outside the budget the president submitted to Congress. In 1956 the President vetoed a similar bill for $1.6 billion.

Pressing hard in the jobless situation is the fact that many workers have already exhausted their unemployment benefits. The amounts vary according to state law. About 43 million workers are covered by these plans, and the question is whether the Federal government shall pour a subsidy into the funds which would allow benefit payments to be resumed in cases of prolonged unemployment.

This is really a good old recession, say the economists appearing before House committees studying the problem, rivaling both of the "recessions since

"Don't quibble, lady . . . just wrap this Dillard paper around you!"

Dillard PAPER COMPANY

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1926 "IF IT'S PAPER" 1958

the war's end." But it is nothing like what happened in 1929, said Dr. Geoffrey Moore, of the National Bureau of Economic Research. He called it "intermediate" between what happened in 1929 and in 1938 and 1949. But he said the signs of fast recovery are not as pronounced as in 1938 and 1949, and that all factors "are not as reassuring." Some House members think the severity of the present decline is vastly over-estimated.

"We are in another do-nothing Congress," complained one House member, "in which politics has never been played harder or worse." Nearly three months of the session are gone, and only about 20 public laws have been passed and signed by the President, yet the President made almost 100 specific proposals. With Fall electioneering coming up, there are only four months to go in this session.

Mr. Eisenhower made it very clear that any Republican that gets his help in getting re-elected this year will have supported his major policies. He pointed out he polled more votes in 1956 than any Republican candidate ever did, and a G.O.P. candidate can improve his chances by going along with the Administration, including foreign aid and trade. He indicated he would not go to the front for a Republican who did not support him on foreign aid, or on his foreign aid policies.

Some unions are redoubling their efforts to gain wage increases this year—because they think it will help to stem the "recession," and that the time is opportune. They want more job-security defenses and higher unemployment benefits. Their program is of massive effect on the economy because they have become so much a part of it, and with pressures they wield reaching both union and non-union industries. Chief aspect of the unions' program this year is whether prices will be pushed higher, and new wage pressures set loose in all of industry.

Defense Department officials will ask Congress for additional grants up to $3 billion to carry the military program to June 30. These sums will raise defense spending for this fiscal year to the highest point since the end of World War II, and will put the current year's budget deeply in the red. It is possible that another lift in the national debt ceiling may be found necessary before the end of the fiscal year.

Costs of the anti-ballistic missile program can well be expected to double the costs of continental defense within the next few years. Cost of a single inter-continental ballistic missile wing may be well over $1 billion. Impact of the costs of liquid fueled missiles, and their control, has not been fully developed by Pentagon officials, and may be submitted to Congress before late next year, or in 1960. Cost estimates so far do not include ground-handling equipment, and personnel training and other expenses. The expenditure outlook is becoming more staggering.

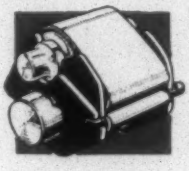
A hard, jolting blow to indiscriminate foreign economic aid has been landed by Senator Bridges (R., N. H.), top Republican member of the Senate Appropriations Committee. This aid, he said, should be closely restricted to "friends who stand with us and stick with us." He denounced grants to neutralist India and Communist moving Indonesia, almost $300 million; $98 million to Communist-controlled Poland; and $62.5 million in farm surpluses to Communist Yugoslavia. "Such aid to Communist and neutralist regimes," he said, "is completely contrary to every concept of our program."

Some countries into which literally billions of dollars in aid have been poured, said Senator Bridges, have made no contribution whatever to our defense. India's contribution, he said, is "an ambulance unit and a few jute bags." Most of these countries, he said, have opposed the position of the U. S. on every conflict with Communist expansion. Differentiating in brands of Communism, he said, is fallacious, and "remain Communism any way you cut it."

Whitin Spinning Changeovers

A recent installation of Whitin Spinning Changeovers

. . . the *SMART* way to stay COMPETITIVE



The Whitin 2-apron drafting system with over 12,000,000 spindles sold, has become an industry byword; its performance has created standards by which other systems are judged. Today's Whitin SUPER-DRAFT® which is now available as a Changeover on standard spinning frames, provides you not only with superb fiber control but also will operate on drafts up to 50 (or even higher) with no loss in yarn strength or quality.

While applying Whitin Super-Draft Changeovers, more and more mills grasp the opportunity to equip their frames with UNITROL,® Whitin's distinctive top arm weighting system. Unitrol supplements the performance of the Super-Draft system by insuring accurate, uniform weighting on all rolls while supplying Whitin antifriction front top rolls and non-lubricated middle and back rolls.

Mills using this combination of changeover units are enjoying such direct spinning benefits as reductions of 20 to 30% in end breakage and 30 to 40% in cleaning costs coupled with improved production per operator.

Call your Whitin Sales Engineer today! Ask him to look over your mill situation—he'll appreciate the opportunity of showing you how Whitin Spinning Changeovers can help you to stay competitive — the smart way.

Buy "competition insurance"- BUY WHITIN!

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

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For The Textile Industry's Use

– NEW MACHINERY, EQUIPMENT AND SUPPLIES –

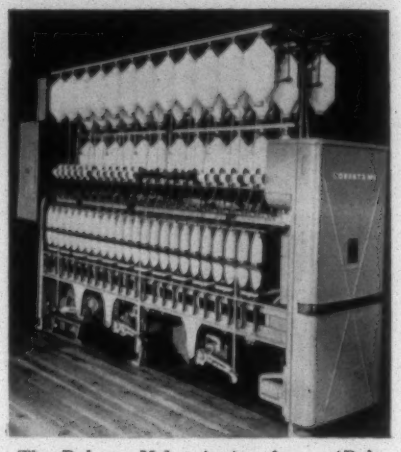
Aluminum Black Dye

A new addition to its range of fast Oxanal dyes for anodized aluminum has been announced by Ciba Co. Inc. Known as Oxanal Fast Black GL, the new dye is said to offer a clean, neutral black shade of excellent light and weathering fastness in regular aluminum dyeing procedures.

A straight or homogeneous dye, Oxanal Fast Black GL exhibits a jet black shade at full strength and in very light depth offers a blue-green tone. When applied to anodized aluminum by simple standard procedures, it is said to impart a smooth, even color over the practical shade depth range. Full strength shades exhibit the best fastness, particularly the best fastness to light fading. Water sealing for 30 minutes at the boil, pH 6.0, gives top results, according to the company. Resistance to light fading in Fade-Ometer and sunlight testing is very good. Weathering tests show very little or no shade change in one years' exposure, Ciba reports. (Request Item No. C-1)

Spinning Machine

An all new and advanced textile spinning machine is now in full production on order by Roberts Co. Under development, improvement and mill testing for nearly 2 years, the new Roberts M-1 spinning frame is reported to provide for greatly improved yarn quality with increased breaking strength and evenness, lower operating costs, increased output via higher spindle speeds, increased package sizes (more ounces of yarn per bobbin), elimination of roving processes, and reduced cleaning-maintenance time. Flexibility for spinning cotton, synthetics and blends is achieved on the new M-1 through the use of Roberts double apron drafting—not available with most other systems.



The Roberts M-1 spinning frame (Roberts Co.)

The machine is made in 3 widths, 25", 36" and 39". Machine length is unchanged and may run upwards of 40', depending upon the number of spindles incorporated, which may vary from 250 to 350 and more.

Other features of the new Roberts M-1 include elimination of top roll oiling, higher drafts, improved bobbin build, larger rings and bobbin lengths, and substantially reduced ends down. The manufacturer states that into the chassis has been built all the ball bearing features needed to provide the smooth operation and productivity for modern production goals.

(Request Item No. C-3)

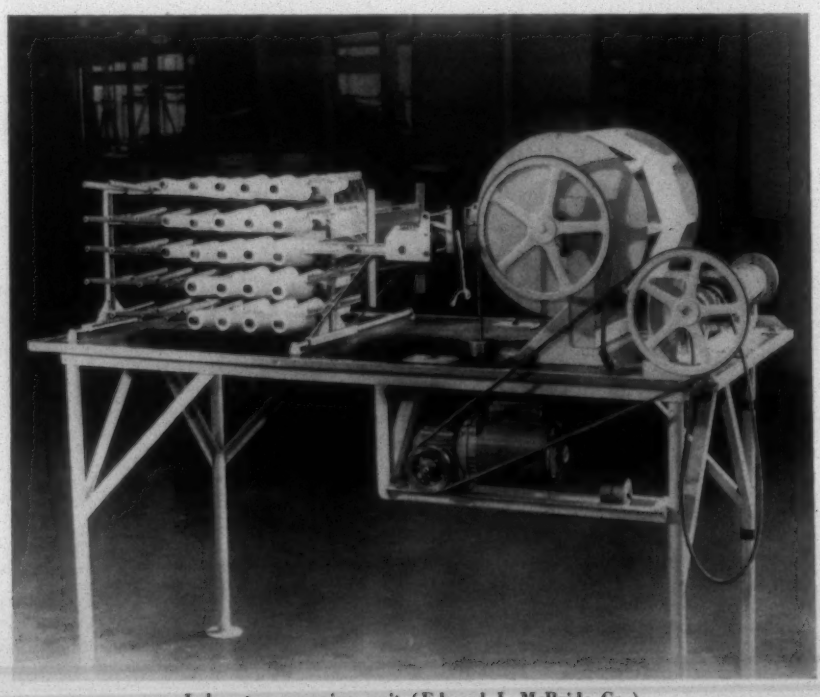
Laboratory Warping Unit

A complete laboratory warping unit has been developed by the Edward J. McBride Co. for use by fabric stylists, design departments of weaving mills, textile schools and laboratories, and is ideally suited for training in textiles.

This unit, complete with creel, warping reel and beaming attachment, is said to make the task of warping preparation for small hand looms as well as miniature power looms a fast, economical and fully-controlled operation. It is claimed to eliminate the tedious time consuming operations required by hand methods and at the same time to provide for more uniform warp.

The entire unit is mounted on a platform which can be supplied with or without steel legs. A creel for the unit can be supplied for revolving draw off, as shown, or for over end delivery of yarn complete with tensions and stop motion. Universal holders can be provided to permit ready adaptability to virtually any type package. The revolving draw-off creel is movable from side to side to align with sections required for the warp. A movable hack stand is provided for the creel with over end draw. The creel as well as the beaming attachment is power driven and can be plugged into any convenient outlet.

(Request Item No. C-2)



Laboratory warping unit (Edward J. McBride Co.)

New Navy Blue

A new greenish shade of navy blue has been added to its pre-metallized Irgalan line by Geigy Dyestuffs, division of Geigy Chemical Corp. The new dyestuff, Irgalan Navy Blue 2 GL, is recommended by the company for dyeing wool in the piece or yarn, as well as raw stock and slubbing, and for raw silk, nylon and polyamide fibers, as a self color and for shading purposes. In combination with Irgalan Navy Blue 5 RL a very wide range of navy blues can be achieved, Geigy reports. The most desirable property of this new coloring agent, according to Geigy, is its good light fastness, with a 6-7 rating for wool and 7-8 rating for spun nylon in sunlight; and 6 for wool and 7 for spun nylon in Fade-Ometer. According to the manufacturer, Irgalan Navy Blue 2 GL's excellent fastness rating in sunlight on nylon makes it partic-

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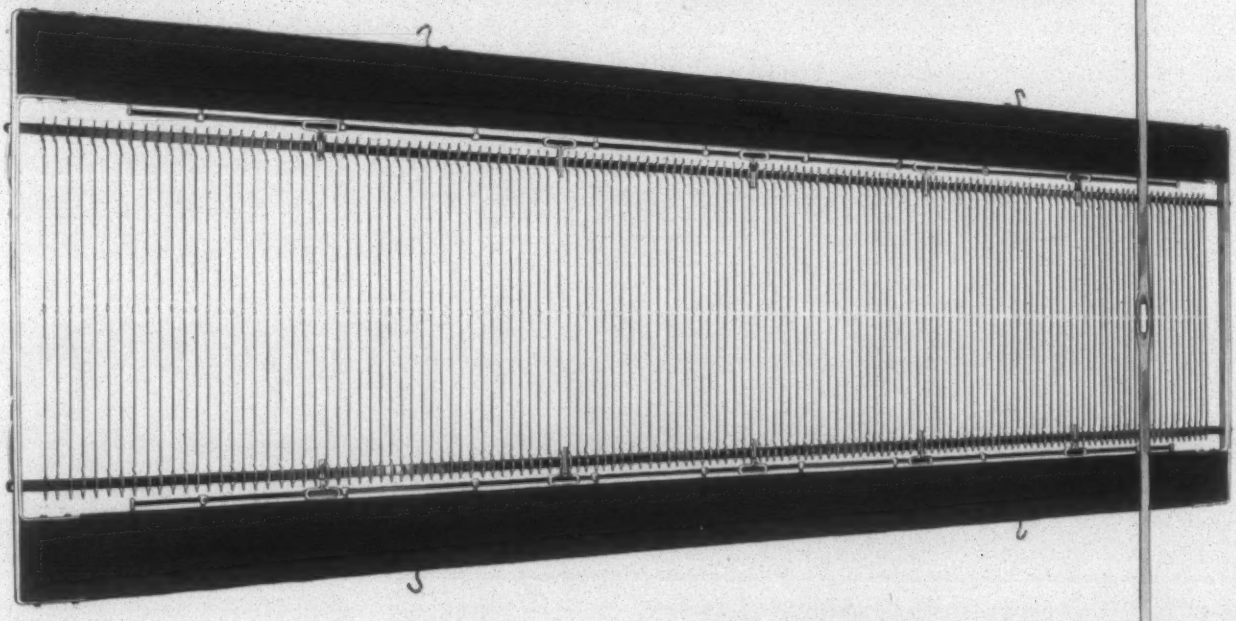

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Stehedco harness frames are carefully made of selected lumber, straight and knot-free, to meet the most exacting standards. Braces and hardware are designed to give smooth, consistently fine performance. Tempered steel rods give added life and more efficient operation.

Steel Heddle Sales Engineers, experts of the textile industry, are constantly alert to the needs of the textile mills, and Stehedco products are first with the latest improvements—after being field tested in large scale operations.

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ularly suited for the automotive upholstery trade, and for other applications requiring extremely good light fastness. This new product is also said to have high degrees of fastness to washing, water and perspiration. Geigy reports good solubility, good exhaustion when used in neutral dye baths, good penetration and level dyeing. Navy Blue 2 GL also has good fastness to milling, sea water, carbonizing, hot pressing and decatising. The color is said to grow greener under artificial light.

(Request Item No. C-4)

Sectional V-Belts

Sectional V-belts, designed for quick and easy installation on V-drives of any length, are now being produced by R. & J. Dick Co. The adjustable-length V-belts are being made under the tradename Dixlink, for every size and kind of V-drives, according to the company, which manufactures industrial belting, chain drives, sheaves, shaft bearings and other power transmission and conveying equipment. Because of the adjustability feature, a single coil of Dixlink V-belt is said to often eliminate need for stocking many different lengths of V-belts of the same type. The Dixlink is made in special oil-resistant, heat-resistant and fire-resistant grades, as well as in the regular grade for general use. The Dixlink is designed particularly for the fast and simple installation where an endless unit is not suitable due either to structural restrictions or fixed centers. They are made to provide maximum power transmission efficiency for V-belt drives of from ½ to 1,000 h.p.

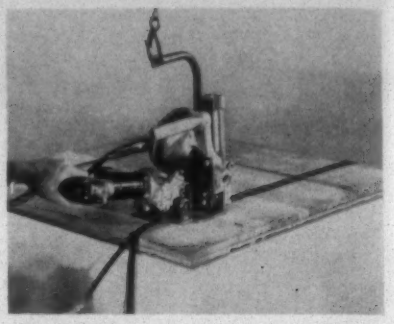
(Request Item No. C-5)

Steel Strapping Tool

A fully powered combination steel strapping tool, which combines tensioning, sealing and cutting, has just been announced by Acme Steel Co. The new tool, called the A4 Pneumatic Steelstrapper, provides power for every operation after the strap is inserted, according to the company. Each strap is power applied to the same predetermined tension by means of a throttle on the handle. Another control on the same handle produces a sealed joint and cuts the strap flush with the seal.

Acme Steel has a full line of mounts which include overhead tool suspension systems and accessories for the A4 Steelstrapper. Fixed tool mounts are available for permanent use in one location. Tool suspension mounts are also available which permit the use of Acme Steel equipment over a large area by means of overhead monorails and cranes. The A4 Steelstrapper can be used to apply either vertical or horizontal straps. Since the power sealing lever is located on the handle, the A4 can be operated on top of high packages with ease, the company reports.

Three models of the A4 are available. The A4A4 is used for ½" strapping, the A4A5 for ⅝" strapping and the A4A6 for ¾" strapping. All three models will apply



The A4 Pneumatic Steelstrapper (Acme Steel Co.)

straps ranging in gauge from .015" to .023". The gripping dog on each model is the full width of the strap and is of a design that is self-cleaning to reduce wear and assure proper tension. Strap take-up speed can be adjusted with a throttle control screw. Seals are fed from a magazine that holds 100 seals. (Request Item No. C-6)

Quick Couplings

A new line of quick connect and disconnect couplings, which is said to meet military specification MIL-C-4109-A and is interchangeable with other make couplings, has been introduced by Perfecting Service Co. Greater flow, less pressure drop, a smaller, more rugged and compact design are emphasized as the advantage of this new D Series interchangeable coupling. The couplings are now available at the factory as well as distributors throughout the country, in various style and connections—male, female, hose stem and reusable hose end connections, in sizes ¼", ⅜", ½" and ¾", with working pressures up to 10,000 p.s.i.

The manufacturer's patented Pushomatic action, featuring one-hand operation, is incorporated in this new design. The coupling locks automatically, without turning or twisting and the locking mechanism makes a positive, leak-proof connection, highly resistant to impact or rough handling. Full 360° swivel action reduces pneumatic tool operator fatigue, the company reports, as well as eliminating troublesome hose kinking.

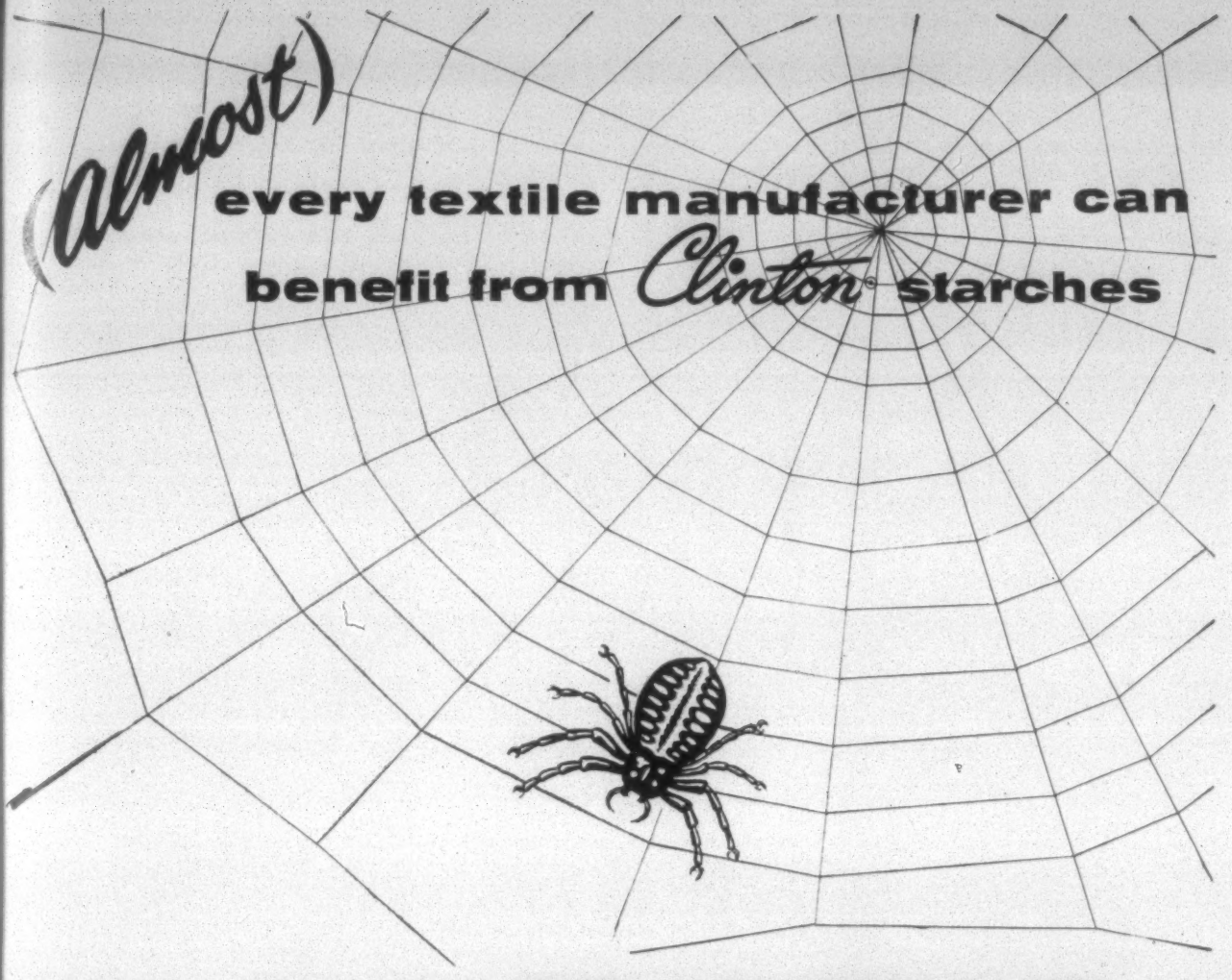
The interchangeability of the couplings makes possible replacement of either coupling sockets or plugs, without changing or having separate air lines to existing production equipment. It is also said to allow the advantage of avoiding complete change over expenditure. Complete details are outlined in a new bulletin, No. 1500.

(Request Item No. C-7)

Precision Flat Stock

A complete line of precision ground flat stock is being offered to the general and metal-working trade in the Southeast by Southern Engineering Co., which was recently appointed warehouse distributor for Jessop Steel Co. The line includes Jessop's Truform oil hardening steel, its 5% chromium air hardening steel, and a case hardening low-carbon steel.

The three grades are processed at the Jessop company. Manufacturing standards



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THOUGH OF NO CONCERN TO THIS MASTER WEAVER, warp sizing is often the key operation in textile manufacture. Clinton starches answer every common requirement for warp sizing. Because of their uniform high quality, Clinton starches can be depended on to permit high weaving efficiency under a wide range of conditions. It's a fact that many mills use Clinton starches as a standard of comparison.

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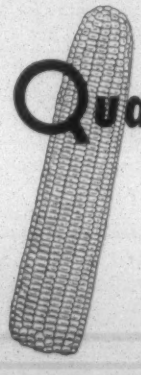

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are reported to include a finish of 10-35 micro inches and tolerances as follows: Thickness: within plus or minus .001" of size; Width: within plus .005", minus .000" of size; Squareness: edge to surface .003" per inch of thickness; End squareness: allowance of .004" per inch of width.

Each piece of precision ground flat stock processed by Jessop is permanently identified with a grit-type marking before it is coated with an anti-rust compound and individually packed. The envelopes are marked wtih size dimensions, chemical analysis, and applicable heat-treating instructions.

According to Southern Engineering, the low-carbon ground flat stock is processed from a fine grained silicon killed steel with uniform analysis. It is reported to be easily machined, to have excellent welding qualities and to respond uniformly to case hardening. Supplied in a standard length of 24" it is recommended for jigs, fixtures, patterns, stripper stock and machine parts. The manufacturer reports substantial savings through its use in applications requiring a ground finish to close tolerances but not requiring a hardenable steel.

Truform and Windsor are available in both 18" and 36" lengths. Jessop produces a total of 1,797 standard sizes in three grades of precision ground stock, but maintains a large stock of raw material which enables them to process non-standard sizes for prompt shipment.

(Request Item No. C-8)

Yarn Conditioning

Mona Industries has announced the development of the Monarc yarn conditioning attachment for the automatic Abbot quiller. The attachment is said to allow the weaver to take advantage of the improved running qualities of conditioned yarn without adding an extra conditioning operation to his working cycle.

The attachment is simple, without moving parts, the company reports. Part of the cork friction strip on the receiving table of the quiller is being replaced with a liquid transfer surface, which is fed with the conditioning liquid from a shallow trough below the table. As soon as the fully wound bobbin is released from the winding head and drops to the table, the bobbin pusher rolls the quill over the liquid transfer surface where the required amount of fluid is picked up by the yarn. The bobbins then continue on their route. A certain ageing time for the conditioned yarn will be necessary, as usual, before the quills reach the shuttle.

The amount of conditioning liquid transferred to the yarn will depend on the individual case and will vary roughly between 3% and 15%. It can be regulated either by means of a sliding cover which will change the size of the transfer surface or by raising or lowering the liquid level in the feed trough which is fed from a supply bottle with automatic level control.

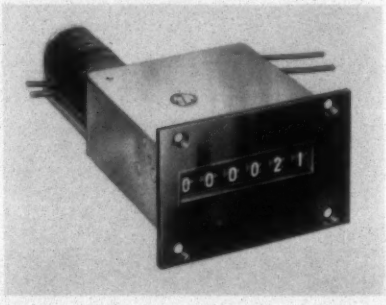
(Request Item No. C-9)

Dielectric Heaters

Extension of its line of dielectric heaters to include units up to 200 k.w. has been announced by Allis-Chalmers Mfg. Co. Allis-Chalmers electronic heaters, available in a 3 to 200-k.w. range, are reported to be speeding production and cutting costs in a wide range of jobs calling for heating, drying, baking and curing of non-conductive materials. In addition to the drying of synthetic fibers, applications for Allis-Chalmers dielectric heaters include twist setting of rayon cord and a wide variety of other drying and curing operations.

(Request Item No. C-10)

Electrical Counters



Series 1591 electrical counter (Veeder-Root Inc.)

New Series 1591 Electrical Counters have been developed by Veeder-Root Inc. to fill the gap between standard and electronic counters for industrial, data processing or laboratory and scientific uses. The company reports that the counters are designed for accuracy and long life at very high speeds and are rated at 3,000 counts per minute, with extended test runs up to 6,000 c.p.m.

The units have the convenience of push-button resetting, either mechanically, right on the machine, or electrically from a distance. According to Veeder-Root, panel groups can be placed together and one button can reset an entire panel. They feature large figures, small size, low-wattage coils for continuous duty and other advantages on which patents are pending.

(Request Item No. C-11)

Narrow Fabrics Loom

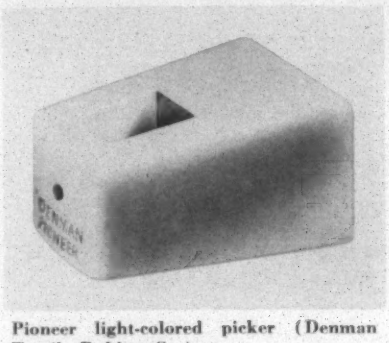
Production of a new high speed nylon narrow fabrics loom designed to produce with top efficiency 100% nylon automobile safety belts at lower cost has been announced by The Fletcher Works Inc. This loom, built on the basic Fletcher Multi-Fab high-speed standard narrow fabrics loom and using the basic Multi-Fab ribbon design has increased speed to nearly 200 picks per minute.

The new Fletcher nylon belt production

weaving machine also boasts a heavier duty warp stop motion for greater service with considerably less maintenance. A broad beam let-off allows for more production and less changes in the warping operation, Fletcher reports. Parts for this new loom are said to be easily obtainable since most parts are standard. The Fletcher loom is rugged enough to withstand high speed weaving, and is designed for quality production at low cost, Fletcher points out.

The frame is a heavy duty construction of cast iron with cross sections of fabricated steel bracing. An automatic electric warp stop motion controls each warp end. Start and stop jog buttons are mounted within easy reach. Motor drive is the latest Warner brake style. (Request Item No. C-12)

Light-Colored Picker



Pioneer light-colored picker (Denman Textile Rubber Co.)

A new, premium light-colored picker, manufactured by Denman Textile Rubber Co., a subsidiary of the McCandless Corp., has been developed to give 15% longer life and to not streak or mark light colored fabrics. This latest addition to the line of Denman Pioneer loom parts is the result of extensive research into the needs of the industry and months of testing in the Denman textile laboratory and in the field, the company reports.

To introduce the new product to the industry, the company is offering a test kit by means of which the new light-colored pickers can be tested right on the looms of prospective customers. The kit, which is offered free of charge, makes it possible to test all the qualities of the Pioneer light-colored picker before ordering them in quantity. (Request Item No. C-13)

Synthetic Resin Gum

Hart Products Corp. has announced the development of Synthogum PR, a new synthetic resin gum in powdered form. It contains 90% active material and combines high viscosity characteristics with ease of solution, Hart reports. Synthogum PR dissolves readily to yield dilute solutions of high viscosity recommended for the preparation of printing pastes for screen and roller printing. Being a completely synthetic gum, Synthogum PR is reported to have a high degree of uniformity and to contain no impurities associated with natural gums. Furthermore, the company says, its low cost compared to natural gums makes it highly economical for all printing and thickening applications in the textile industry.

Samples and technical service data sheets describing the properties and applications of Synthogum PR are available from the company. (Request Item No. C-14)

Sewing Machine

A new Railway Sewing Machine has been developed for joining carpets for continuous processing and can be fixed to the machine as a unit for an individual process or can be fitted with portable stands, according to Trumeter Co. The machine will sew across a 10′ wide carpet in less than 10 seconds, the company reports, and will sew carpet backings, carpets with pile, tufted carpets with pile and latex backing. It sews a chain stitch ¼″ long which is quickly removed on completion of the process.

Carpets to be joined are fixed to the machine with suitable holders and the sewing head traverses across, giving a straight seam, which prevents creases traveling up the pieces when put under tension. The machine, which comes complete with motor drive, is held in one hand, which also operates the starting button as the machine traverses across. The machine is quickly returned to the starting point by pushing it along the rails on its own rollers.

The sewing head can also be used as a portable machine by being detached from

FOR THE TEXTILE INDUSTRY'S USE—

the railway carriage and taken to the carpets to be sewn. By this method a straight seam depends on the skill of the operator, but it is sufficiently good for some processes. (Request Item No. C-15)

G. E. Textile Motors

A complete line of textile motors that feature enclosed, non-ventilated construction is now available from the General Electric Co.'s small integral motor department. Newest addition to the line of textile motors is a 4-pole, 5-horsepower rating. The T.E.N.V. motors are designed for such applications as spinning and roving frames, and warping and twisting machines.

The enclosed, non-ventilated design minimizes fire hazards by preventing lint from coming into contact with the windings, according to company engineers. Lint-cleaning is virtually eliminated, they report, and rugged cast-iron construction of the motors resists physical damage.

Non-ventilated construction is more flexible, permitting special designs, such as brake motors, to be built into the textile line more easily than with fan-cooled or screenless open motors, the engineers said. The new Tri/Clad 55 line is smaller and lighter than the screenless open textile line it replaces.

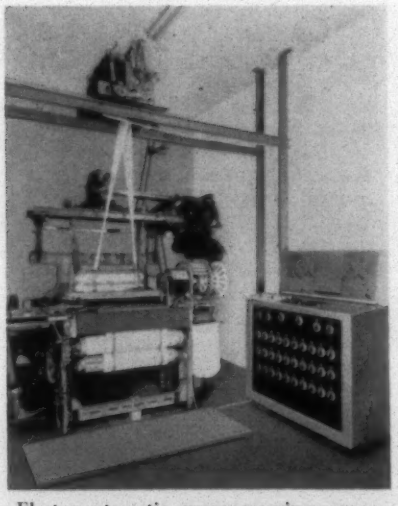
The complete line of T.E.N.V. textile motors is available in the following ratings: 1 to 5 h.p. at 1800 r.p.m. and ¾ to 3 h.p. at 12 r.p.m. To obtain maximum horsepower from the smallest practical frame size, the following motors are rated 75 C rise continuous: 2, 3 and 5 h.p. at 1800 r.p.m. and 1½, 2 and 3 h.p. at 1200 r.p.m. Advances in insulating materials enable 75 C rise rated motors to more than equal the life of 55 C rise motors, according to the engineers. (Request Item No. C-16)

Cibalan Black

Cibalan Black 2GL, a straight black with greenish cast, said to be suitable for travelwear, wool suitings, men's hosiery and other wool, nylon and silk applications, has been developed by Ciba Co. Excellent light fastness and simple application methods are said to make Cibalan Black 2GL an ideal companion to the neutral shade of Cibalan Black BGL. The dye will bring added versatility to the dyer confronted with matching blacks from neutral to jet shades, Ciba reports. Full black shades of better than 200 hours light fastness and good wash fastness are reported on wool and nylon in 7% dyeings of Cibalan Black 2GL. The dye yields level results in union dyeing, especially on wool/spun nylon unions; and it provides added range to the Cibalan series for easier shade matching.

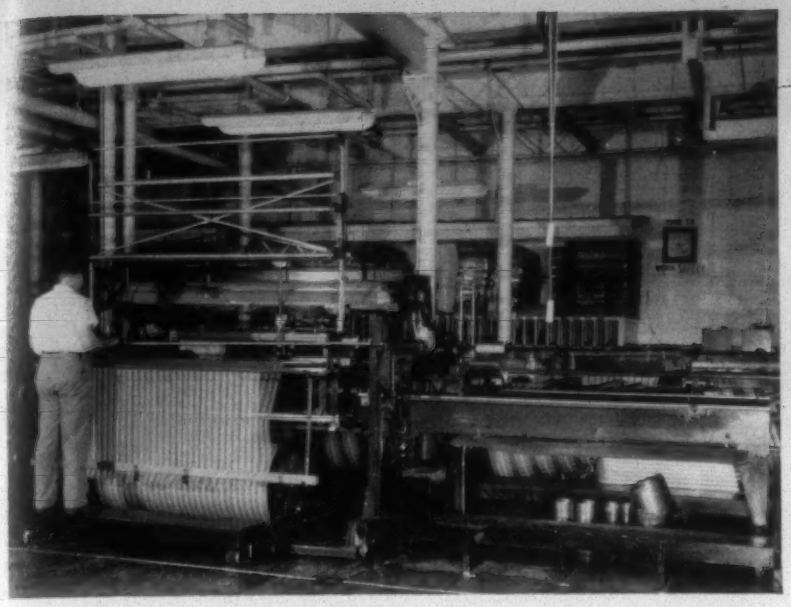
(Request Item No. C-17)

Name Weaving Attachment



Electro-automatic name weaving apparatus (A.B.C. Textile Machinery Co.)

An attachment to the loom which will weave names into cloth without the use of Jacquard cards has been introduced by the A.B.C. Textile Machinery Co. The names to be woven can be simply set in an electrical plug board by any operator of the mill, according to the company, and the apparatus will then control the weaving of the name by an electro-magnetic system. It is therefore possible to personalize towels, tablecloths, bedsheets, napkins, etc., with woven names in small runs on an economical basis. Until this machine came into use, the company reports, it was impossible to weave names in short runs because of the expensive costs of making Jacquard



Operator on the Barber-Colman Warp Drawing Machine is here shown drawing a fancy stripe pattern.

At Avondale Mills' Bevelle Plant, Alexander City, Ala., the machine shown here has reduced drawing-in time from 8 hours or more per warp to less than 1½ hours. Most warps at the Bevelle plant range between 4,000 and 6,500 ends. Most cloth styles have 3, 4, or 5 harnesses. Approximately 50 styles are being drawn. Fabrics woven are tickings in plain and fancy stripes, twills, drills, denims, and drapery materials. Fabric constructions range from 65 to 112 ends per inch, average being about 90 ends per inch.

BARBER-COLMAN

WARP DRAWING MACHINE

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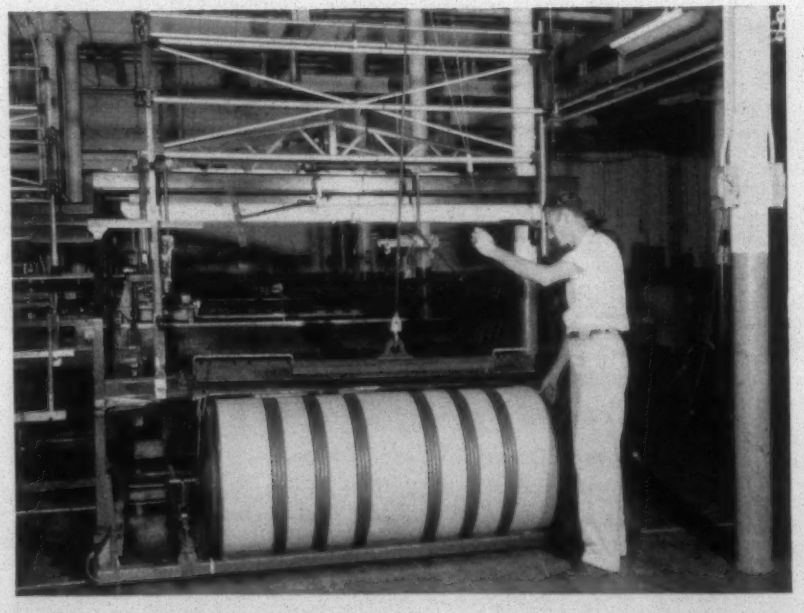
In addition to the savings produced by shortened time of warp-drawing, the machine has required less than expected maintenance, and the warps have proved to be of greater accuracy. An operator and two helpers keep the machine and its two trucks going (one truck is loaded while the other is in the machine). The machine shown is a Model 66 GSH, nominally rated for 66" warps, operating at a speed of 140 ends per minute, and capable of drawing 22 harnesses, 6 banks of drop wires, and reed.



Helper in this picture is readying a second warp beam in the truck, which is then rolled up to the machine.

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cards. A Swiss product, the machine was introduced a few months ago. Units have since been placed in mills in England, Holland, Italy, France and Sweden.

(Request Item No. C-18)

Spiked Apron Magnet

The new Eriez Model D spiked apron textile magnet, developed by the Eriez Mfg. Co., is said to be a low-cost, ultra-powerful deterrent to tramp iron damage in carding and garneting machines. Designed specifically for light duty applications in woolen and worsted mills, Eriez says the new unit is also ideally adapted to installation over feeders handling cotton and waste materials. The magnet is reported to have the advantage of being 100% adaptable in standard units, to virtually any width. It is made in lengths from 18" through 72", in 2" increments, and is provided with an aluminum angle frame designed to adjust, within any fraction of 2", to the precise dimension of the feeder frame to which it is attached. The magnet is furnished with an extruded aluminum cover which completely encloses the non-electric magnetic circuit, adding strength and rigidity to the unit while also protecting it from damage and from the chance collection of iron around the Alnico V magnetic castings. It is hinged to provide for quick easy removal of iron accumulations from the face plate.

(Request Item No. C-19)

Vat Yellow By Geigy

A new bright clean yellow which produces golden yellow self shades on cotton and rayon has been added to Geigy's range of anthraquinone vat dyestuffs. Called Tinon Yellow LGR Paste, the new vat dyestuff brings to 6 the number of yellow shades in the Geigy vat series. It is greener than Yellow PGA and slightly redder than Yellow P2GA. According to the manufacturer, Tinon Yellow LGR Paste is characterized by excellent light fastness as compared with other vat yellows, with ratings of 5-6 for light shades, and 7-8 for heavy shades in sunlight, with relatively parallel fastness in the Fade-Ometer. It is reported to be especially desirable for the dyeing of fast-to-light shades, either as self shades or in combination with other fast-to-light vat colors.

Additional interesting properties of Tinon Yellow LGR Paste claimed by Geigy are excellent dispersion, very little shade change on soaping, stability at high temperatures, excellent over-all fastness properties and level dyeing. A special bulletin, V-36, detailing the new color's fastness ratings, dyeing methods and characteristics, with samples of cotton yarn, cotton fabric and spun rayon fabric, dyed in light to heavy shades with Tinon Yellow LGR Paste, is available. Copies can be obtained by contacting any Geigy branch office.

(Request Item No. C-20)

Bolt Anchoring Cement

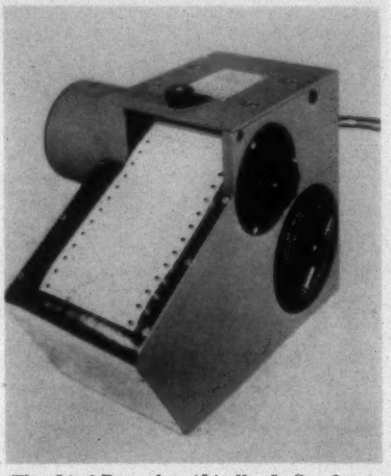
The addition of a new chemical element has considerably improved its fast-setting pourable cement for speedy bolt anchoring, according to the Monroe Co. Inc. This product, Evr-Tite, is reported by the firm to possess new setting, hardness, abrasion resistance and shock absorbing characteristics which enable it to withstand severe vibration of heavy machinery. Company laboratory studies of the product indicate that its strength has been raised up to 10 times that of ordinary powder or holding cement while the expansion factor has remained comparable.

Supplied as a light grey powder, Evr Tite mixes with water to form a semi-fluid easily-poured compound. Applied around an anchor bolt, it is said to attach itself to the bolt surface, fill all sections of the hole and produce a void-free, monolithic anchor. Monroe reports 10-minute setting of the cement. Bolts can be drawn tight and light machinery put in operation within a half hour. Heavy vibrating equipment can begin operation in less than an hour, the company reports.

Evr-Tite can be hand mixed in a regular mortar box or it can be machine mixed, according to the company. There is no flash-set with machine mixing—a problem with ordinary anchoring compounds.

(Request Item No. C-21)

Recording Machine



The Lind-Recorder (Lindly & Co. Inc.)

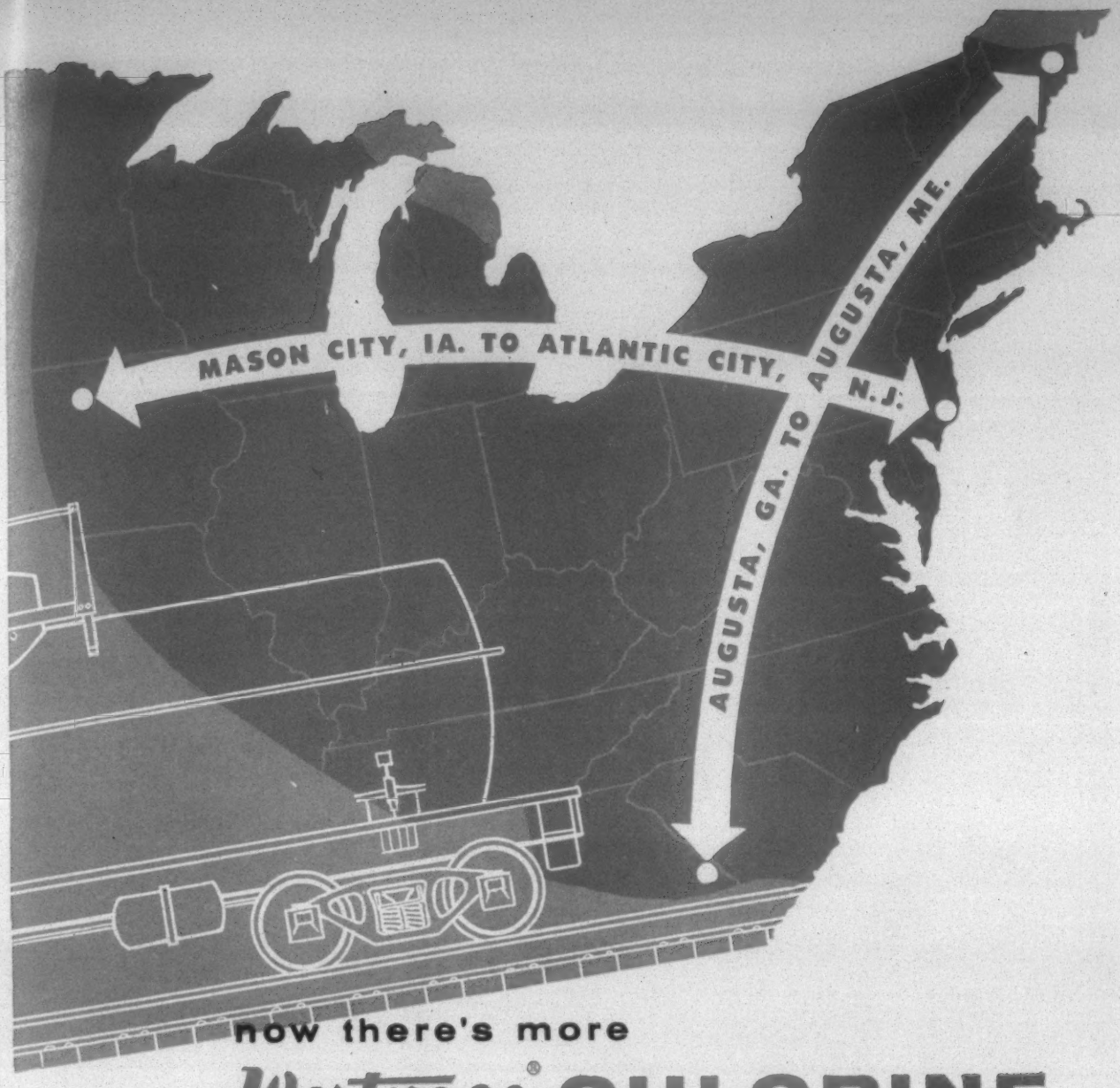
A compact, multi-channel instrumen designed to record the frequency and length of down-time of looms, spinning and roving frames, etc., the number of units produced by each of a battery of machines, the frequency with which each has to be attended and many other facts, has been developed by Lindly & Co. Inc.

The Lind-Recorder can be usd to make a simultaneous, permanent record on paper of many ocurrences of an on-off, yes-no or here-there nature such as on-off machine time, mechanical movements such as the throwing of a lever or the pressing of a switch, the company reports.

Two sizes of the machines are available, one with 68 recording channels, the other with 44. The marking is made on special electrically sensitive paper with paper speeds of 2, 4, 8, 16 and 32" per hour. The paper is ruled in divisions representing time intervals. It comes complete with power supply and multi-channel recording head and needs only to be wired to the switches or other power interrupting devices. (Request Item No. C-22)

New Textile Rolls

Two new textile rolls have been developed by the Manhattan Rubber Division, Raybestos-Manhattan Inc. The rolls are known as Textractor and Texroc and are used in extracting liquids on mangles, mer-



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cerizers, wringers, ranges and other dye and bleachery operations. They work efficiently as a pair but either roll may be used separately to suit the installation. Manhattan Textractor roll is reported to be more crack-resistant and to extract more water than conventional rubber covered rolls, and the cushion-like nip prevents crushing. Cloth crushing as usually experienced with ordinary rolls is eliminated. Manhattan Texroc roll is an entirely new type of hard white rubber roll that extracts up to 10% more water than metal rolls, minimizes chemical and dye build-up and eliminates pitting. The manufacturer claims that both permit maximum and uniform edge-to-edge water removal and have longer roll life.

(Request Item No. C-23)

Nylon Tire Yarn

Commercial production of a new type nylon tire and industrial yarn has been announced by The Chemstrand Corp. According to the company, the new nylon yarn, to be known as the RHB type, offers greater strength, higher thermal resistance and better adhesion values than tire yarns currently available. It is being offered in 840 denier and 140 filaments.

Chemstrand reports that tire companies can readily convert from the use of HI type yarns to the new RHB yarns. And in order to help tire companies achieve optimum results with RHB yarns, the company is offering technical assistance to processors in adapting the yarn to their machines. Regular HB nylon yarn will continue to be available to those tire companies and industrial users who desire it the company reports.

(Request Item No. C-24)

Saran Monofilament

The National Plastic Products Co. has announced the introduction of a new type of saran, called Saran Spark-L-Ite. Spark-L-Ite is an innovation in saran, National Plastic reports, and has been developed after months of extensive testing and experimentation. It is a lightweight saran monofilament with a sparkling, satiny appearance which is said to offer a greater yield per pound. The unusual softness of this new fiber is expected by the company to make it highly desirable for a wide variety of fabric applications such as automobile seat covers, Summer furniture tapes and fabrics, as well as to accent drapery and upholstery materials since it will not tarnish. The product is said to have the characteristics of strength, durability and cleanability.

Available in a wide selection of "consumer-preferred" pastel shades and other standard colors, these fibers, like all saran fibers, are solidly colored throughout, thus affording maximum fade resistance. A few of the new colors are: Tomato Red, Coraltint, Orange Flame, Chestnut, Gem Azure, Gold, Rico, Silver and Green Glamour.

(Request Item No. C-25)

Bright Green Dyestuff

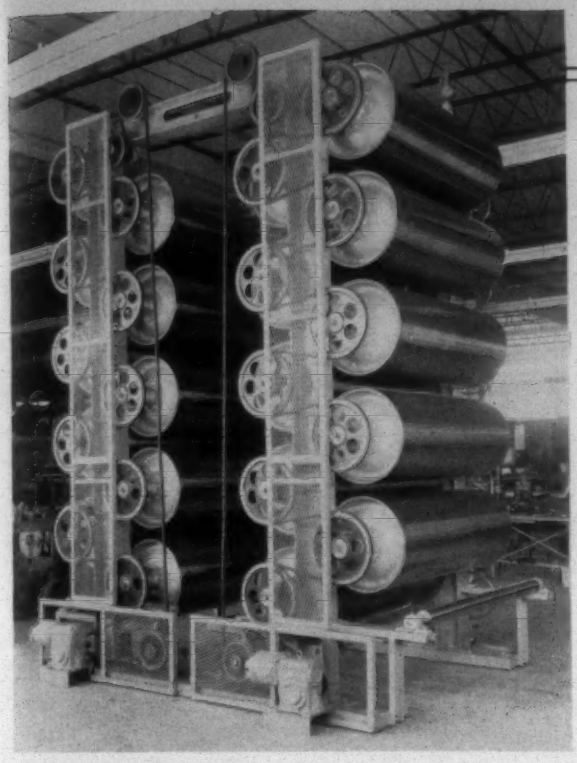
Reportedly providing clean attractive yellow-green shades with good fastness on wool, nylon and silk, Benzyl Green F3G by Ciba Co. Inc. exhibits excellent build-up into heavy shades, especially on spun nylon. Similar in dyeing and fastness properties to the Cibalan dyes, but not quite equal to the Cibalan standard in light fastness, Benzyl Green F3G levels well and shows very good fastness to wet treatments including washing and milling, the company reports. Applicable in neutral or acid baths, the dye is said to withstand topchroming and to be highly suitable for use with Cibalan and Chrome dyes.

(Request Item No. C-26)

Yarn Crimp Tester

Scott Testers Inc. is now offering its new Model BM crimp tester which is said to conform to the standard A.S.T.M. crimp test method. The new Scott unit is said to combine simplicity of construction, simplicity of operation and accurate determination of value.

The replacement of cotton by synthetics in duck has renewed the need for a simple device for evaluating crimp, Scott reports. Crimp is defined as the difference in dis-



All parts are completely erected and tested in our shop before dismantling for shipment.

Cocker
Cloth Ranges

Low Initial Investment

Low Maintenance

Streamlined production in Cocker's new and modern plant has resulted in attractive prices for this fine equipment.

Cocker engineering has produced a more rugged machine to give longer trouble-free service, and has added features which improve operation.

Journals have been greatly improved, with 60,000 lbs. tensile strength instead of the usual 35,000. Seals and bearings are assembled in a single self-aligning unit to provide a leakproof seal.

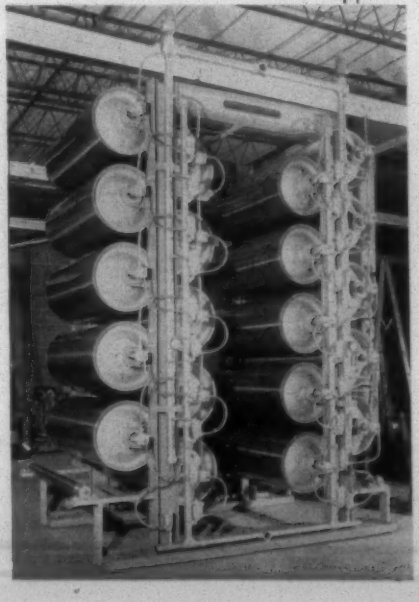
Drums can be either 23" or 30" with faces up to 144", and are ASME Coded for 69 PSI. Accurately matched cylinders assure a total runout not to exceed .045.

V-Belt Drive with automatic belt tighteners require practically no maintenance and run smoothly and quietly.

Drums can be heated from one or both sides, using either rigid or flexible tubing for steam and condensate return.

Base columns and cross members are of rigid construction to permit accurate alignment of all members.

Cocker will engineer these fine cloth drying ranges to fit your exact requirements. Write today for free consultation.



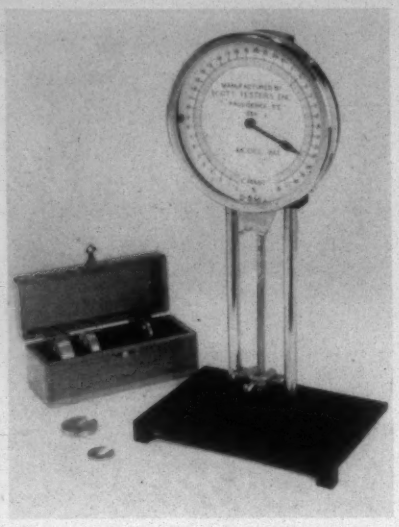
THE LEADER AROUND THE WORLD

COCKER Machine and Foundry Co., Gastonia, N. C.

Plant and Offices at Ranlo, N. C. (Mailing address, Gastonia, N. C.)

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

FOR THE TEXTILE INDUSTRY'S USE—



Model BM crimp tester (Scott Testers Inc.)

tance between two points on a yarn as it lies in the fabric and the distance between the same two points after the yarn has been removed from the fabric and extended under a predetermined load.

To accomplish the test, a loop of yarn is draped over a fixed top support and hooked to the bottom of a movable vertical shaft. Actuated by the yarn loop, the vertical shaft activates the dial pointer, indicating the percentage of crimp.

The machine weighs 5 lbs., is 13½" high and requires no auxiliary equipment. Provision is made for imposing additional weights to the initial 25 gram weight incorporated in the shaft.

(Request Item No. C-27)

Silicone Catalyst

Proctor Chemical Co. has announced the release of a silicone catalyst specifically designed for use with silicone emulsions, offered under the tradename Curite LTC, for use where high curing temperatures are undesirable. It is described by the manufacturer as a catalyst that performs satisfactorily at curing temperatures of 250° F.

(Request Item No. C-28)

Chemigum Latex

Chemigum Latex 248, a medium nitrile content butadiene/acrylonitrile latex developed to meet the need for a high solids product possessing good color stability, has been introduced by the chemical division of The Goodyear Tire & Rubber Co. A general purpose latex, it contains a synthetic surfactant-type emulsification system which promotes stability during compounding and processing. In addition, Chemigum Latex 248 is said to exhibit exceptional resistance to light aging and heat deterioration.

Improved production techniques have reportedly introduced a high solids content in the new Goodyear latex. Preparation of high solids compounds is thereby simplified and pigmented formulations at 60-65% solids utilizing the new latex are being used commercially. Advantages realized with such compounds, according to Goodyear, include higher coating weight per pass and reduced drying requirements.

Chemigum Latex 248 can often be used directly as shipped or with the addition of small amounts of thickener, the company reports, and can be used in uncured form because of the chemical nature of the polymer and the highly efficient antioxidant system added duing latex production.

This new latex also may be used in conjunction with Pliovic Latex 300, a vinyl chloride copolymer also produced by Goodyear. The two latices combine under fusion conditions to plasticize or reinforce each other. Blends of Chemigum and Pliovic latices are reported to be used extensively for non-woven fabric production. Varying the ratio of the two latices permits exacting control of stiffness and hand in the finished product.

The company reports that the adhesion and fiber binding characteristics of Chemigum Latex 248 suggest its use in textile inks, non-woven fabrics, textile backcoatings and sizings and carpet backings. It is now commercially available in drum or bulk quantities with prices following the same schedule employed for other medium nitrile content latices in the Chemigum family. (Request Item No. C-29)

Wetter-Penetrant

A new anion-active wetter-penetrant compatible with alkali, acid or salt systems, has been developed by Sole Chemical Corp. Called Sole-Terge S-2-S, the new compound is said to be useful at low percentage levels in many applications. The company's Technical Bulletin No. 358 outlines the applications of the product.

(Request Item No. C-30)

Sandoz Bright Yellow

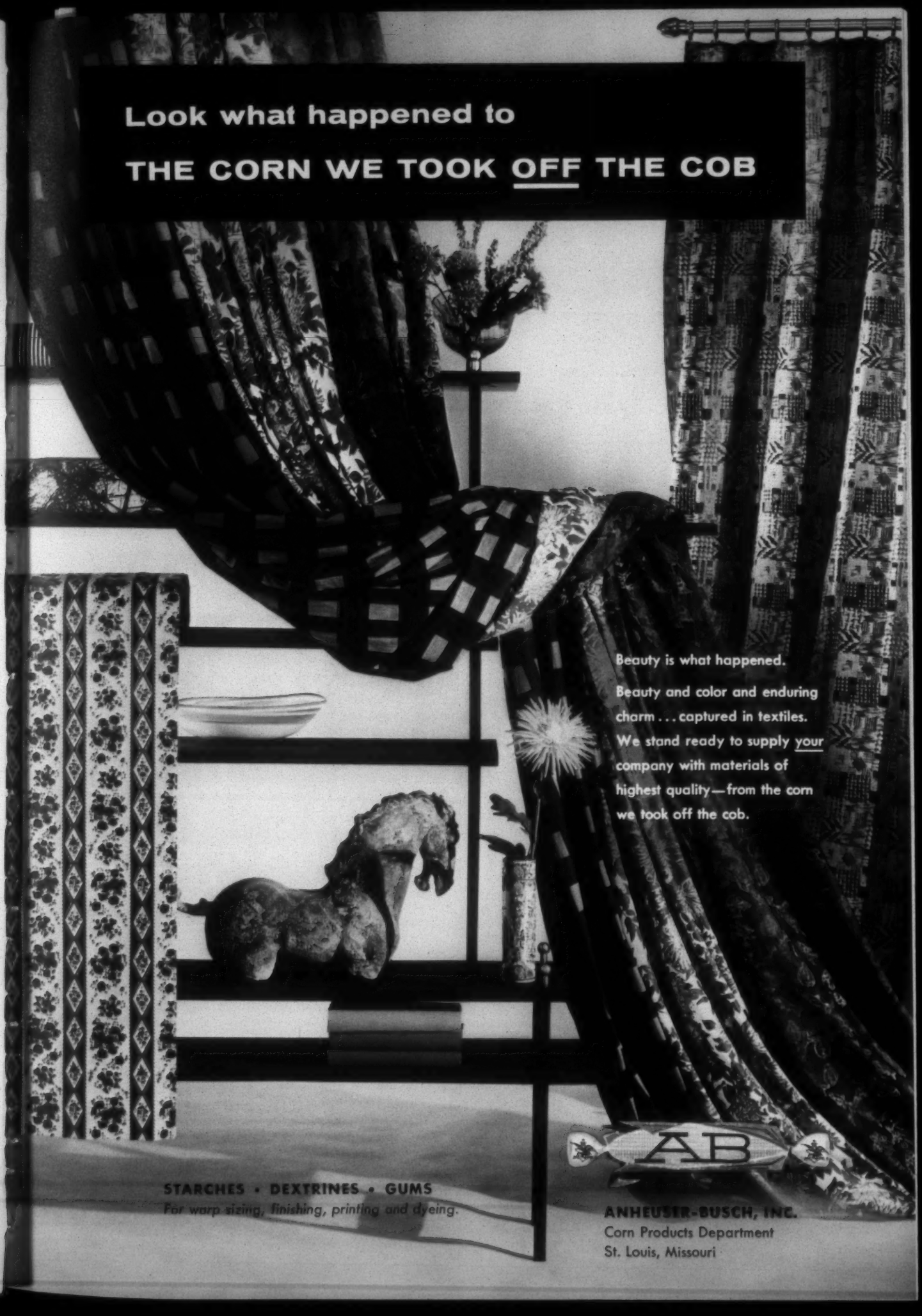
Cuprofix Yellow C-2GL p.a.f. is a bright new after-coppering yellow, announced by Sandoz Inc. for use on cotton and regenerated cellulosic fibers. Characterized by very good solubility and stability to hard water, the dye reserves cellulose acetate and is suitable for pad dyeing. It can be dyed with any of the other Cuprofix "C" brands to give combination shades. Upon aftertreatment with copper sulphate/acetate acid, Cuprofix SL or Resofix CU, the dyeings are reported to show excellent light fastness and very good wet fastness properties. Shades of Cuprofix Yellow C-2GL p.a.f. are stable to resin anticrease finishing, Sandoz reports.

(Request Item No. C-31)

Resin Softener

Emkay Chemical Co. has announced the development of a new resin softener, Emkalon RF, a non-ionic polyethylene softener finish which is said to be suitable for use alone or with thermosetting resins. It is reported to have excellent resistance to discoloration with high heat, and a minimum of chlorine retention.

(Request Item No. C-32)


Look what happened to
THE CORN WE TOOK OFF THE COB
Beauty is what happened.
Beauty and color and enduring charm . . . captured in textiles. We stand ready to supply your company with materials of highest quality—from the corn we took off the cob.
AB
STARCHES • DEXTRINES • GUMS
For warp sizing, finishing, printing and dyeing.
ANHEUSER-BUSCH, INC.
Corn Products Department
St. Louis, Missouri

For the Mill Bookshelf

Shipper's Catalog

Diagraph-Bradley Industries Inc. has published a new catalog entitled "Your Handy Helper" which contains helpful shipping information and illustrates the entire line of Diagraph-Bradley shipping room supplies. A free copy of the catalog can be obtained by writing on company letterhead to this journal.

(Request Item No. C-33)

Integral Distribution Center

A 16-page publication containing complete data on General Electric's new dry-type integral distribution center is now available. The bulletin tells how one-piece construction saves space, simplifies specifying, ordering and installation. Model numbers, dimensions and choice of incoming line components are given.

(Request Item No. C-34)

Timing Belt Drive

The new timing belt drive catalog, TB-58, recently announced by Morse Chain Co., marks the first time information on all 5 basic timing belt pitches has been available in a single catalog. In addition to engineering information, the new catalog covers the following pitches: 1/5", 3/8", 1/2", 7/8" and 1¼". It contains complete information on the selection, installation and use of the positive, lubrication-free drives, and is indexed for quick, easy reference. (Request Item No. C-35)

Box Selection

Detailed steps in specifying a new corrugated box or redesigning your present box are explained in a new edition of "How To Specify Corrugated Boxes," published by Hinde & Dauch. The 36-page booklet illustrates and discusses conventional types of corrugated board. Seven basic box styles and 60 corrugated packing devices used by the Hinde & Dauch package engineer to provide product protection are covered in this guide. The subjects of shipping rules and regulations, product examination, packing and shipping methods, and sales procedures are explored in the booklet, No. 7 in a series. (Request Item No. C-36)

Strapping Machine

A new report giving details on the packaging operation that has reportedly increased the speed and efficiency of packaging for Pepperell (Ala.) Mfg. Co., has been published by Acme Steel Co. The report, Idea No. S6-6, describes how the Acme Steel F3 Strapping Machine compresses and straps telescope boxes of finished cloth in high volume at one centralized location.

Pepperell formerly put its boxes under compression and strapped them by hand. Now the boxes are packed on spur conveyors and moved to the main conveyor line which takes them to the strapping machine. One man now compresses and applies 1, 2 or 3 straps, depending upon the size of the box, in any order in fewer man-hours. The F3 is electrically powered and controlled by push-buttons. One man can strap, weigh, and tally 300 to 325 boxes in an eight-hour day with the new system, according to the report. The 4-page report contains 5 photographs which show the step-by-step operation.

(Request Item No. C-37)

Continuous Starch Cooking

Data sheet F-57-2 describing and illustrating Corn Products Sales Co.'s system for continuous and automatic starch cooking has been issued by the company. As discussed in this publication, continuous starch cooking is automatically synchronized through steam temperature and water feed regulators and Milton Roy controlled volume pumps. Data Sheet F-57-2 explains how these pumps are used in the system to provide extensive savings and high quality cooked starch. Other information includes a flow diagram of the system, equipment specifications and requirements.

(Request Item No. C-38)

Textile Softener And Lubricant

A new textile softener and lubricant called Lurasan has been developed by Onyx Oil and Chemical Co. Lurasan is said to be a low-cost anionic paste with powerful softening properties, ease of solubility and excellent resistance to yellowing due to heat. In addition to its use as a general textile softener and lubricant, is it particularly successful as a softener on cotton with chlorine-resistant resin finishes, as a lubricant and plasticizer on cotton for texturing and mechanical effects, and in general fabric applications for gaining attractive luster in napping and for preventing boardiness during heat setting, according to Onyx. A white paste, Lurasan has a pH of 9.0 to 9.5 and a density of 0.96, 8.0 lbs. per gallon. It can be used on "wash and wear" cottons for improved sewability and tear strength, on general cottons and rayon; for napping on cotton and synthetics; as a yarn softener in package dyeing; and as a top softener for resin-treated fabrics, the company reports. (Request Item No. C-39)

Welding Fittings

Those responsible for the procurement of welding fittings and flanges will benefit by the information contained in a new 4-page folder released by the tubular products division of The Babcock & Wilcox Co. This folder, known as Bulletin FB-503, explains the proper ways to prepare the requisition or order for welding fittings and flanges. By following the suggestions in this folder, the buyer can make clear to the supplier what he requires. Copies of FB-503 are available without charge.

(Request Item No. C-40)

Control Devices

General Electric has published a new 88-page publication covering the complete line of control devices manufactured by its general purpose control department. Selection charts covering starters through 200 h.p. provide quick selection of the proper starter, heater and push-button station for any type of enclosure. The illustrated catalog has guide form specifications for easy and accurate designation of controls, and includes complete product descriptions of motor starters, contractors, relays, solenoids, limit switches, push-buttons and pilot devices. (Request Item No. C-41)

Loom Parts

Three 4-page bulletins describing new products for the textile industry have been issued by Steel Heddle Mfg. Co. The first illustrates the company's 4 new loom harness reeds. They are angle dent reed, the loose spring reed, the rigid metal reed and the rigid pitch reed. The second bulletin illustrates Steel Heddle's harness cords both plain and adjustable. Illustrated in the third bulletin is the firm's Ritsky let-off motion. The let-off motion is said to eliminate the need for bulky weights for each warp beam through the use of a pry bar lever which activates the braking mechanism.

(Request Item No. C-42)

CARPETS, THROW RUGS, CHILDREN'S WEAR, BLANKETS, SEPARATES AND DRESSES, COATS, SHIRTS, ROBES, SLACKS AND SPORTS COATS, ON-THE-JOB CLOTHES...WHATEVER THE END USE...

IT'S BETTER WITH ACRILAN®

From Mill to Mrs., the steady flow all along the distribution pipeline obviously depends on acceptance of the end product.

Toward such acceptance, Acrilan is currently making fiber history . . . being responsible, among other successes, for a wash & wear jersey that has revived a tremendous new fashion interest in this fabric . . . for a blanket whose luxury and machine-washability has made it the best seller in its field . . . for a new kind of carpet with a resilience never before achieved.

Similarly, to all the products headlined above, Acrilan, the acrylic fiber by Chemstrand, has added performance values that have given quick, widespread consumer acceptance. On the record, the case for Acrilan in your mill is a mighty strong one.

THE CHEMSTRAND CORPORATION • GENERAL SALES OFFICES: 350 FIFTH AVE., NEW YORK 1, N.Y.

DISTRICT SALES OFFICES: 350 Fifth Ave., New York 1; 3½ Overwood Rd., Akron, Ohio; 197 First Ave., Needham Heights, Mass.; 129 West Trade St., Charlotte, N. C. Canadian Agency: Fawcett & Co., 34 High Park Blvd., Toronto, Canada • PLANTS: ACRILAN® ACRYLIC FIBER—Decatur, Ala.; CHEMSTRAND® NYLON—Pensacola, Fla.

Serving The Textile Industry

Parks-Cramer, Southeastern Form New Textile Company

A new company, Textile Electronics Inc., has been formed by Parks-Cramer Co., Fitchburg, Mass., and Southeastern Engineering Co., West Point, Ga. It will have offices and showrooms at 2000 South Boulevard, Charlotte, N. C.

Arrangements have been made by the new company with Qualitex Electronische Appratenfabriek of Holland to market its electronic slub catcher. It will be represented in sales by Smith, Crawford & Teat, sales engineers, West Point, Ga., and installation, service and maintenance will be handled by Parks-Cramer. Demonstration equipment will be installed in Charlotte and demonstrations will be arranged for interested mills.

Oliver Landis To Expand Card Clothing Facilities

Richard B. Alexanderson, export manager for A/B Kardbeslag, Norrkoping, Sweden, manufacturer of card clothing, recently paid a visit to this country to inspect the facilities of its representative in the U. S., Oliver D. Landis Inc., Charlotte, N. C. Landis last year opened a card flat clothing shop in Gastonia, N. C., which has subsequently been expanded to handle an increasing volume. Mr. Alexanderson, during his visit, disclosed jointly with Mr. Landis plans for quadrupling the Landis facilities in Gastonia. Machinery is now being shipped from Norrkoping for that purpose, and additional appointments have been made to the Landis staff. In charge of the shop at Gastonia is another card clothing specialist from Kardbeslag, Stig Hagman. Mr. Hagman has been in this country since last Summer.

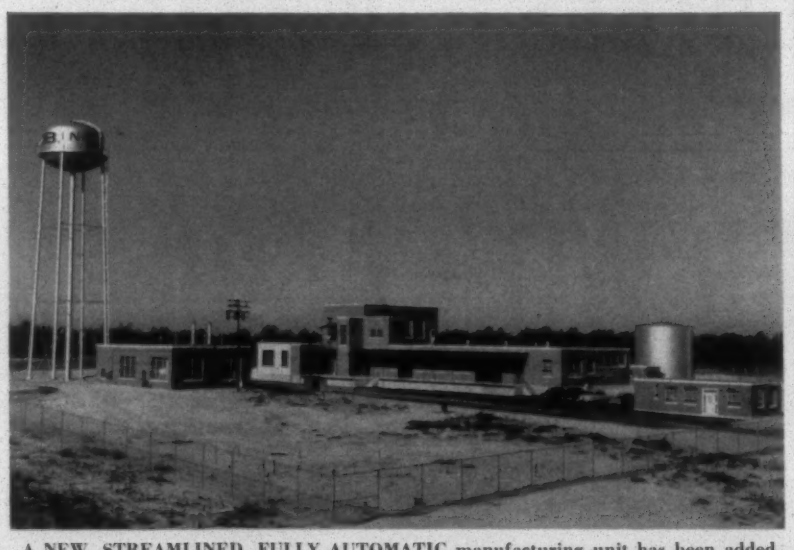
R. B. Alexanderson

Oliver D. Landis

A. E. Staley Mfg. Co. Plans Pilot Plant Annex

The A. E. Staley Mfg. Co., independent corn and soybean processor, has announced plans to build a new three-story pilot plant annex for increased process development work at its Decatur, Ill., plant. The annex will provide additional facilities for experimental processing and small-scale production of new products being developed by the company's growing research program.

Construction of the annex was scheduled to start this month and be completed late next Fall. The annex will be of steel and masonry construction, with many windows of corrugated, tinted plastic. About 30 by 40 feet over-all, it will provide some 3,200 square feet of functional space on its three floors. The new building will be located about 100 feet northwest of the existing process development building, a three-story, 37,000-square-foot structure completed in 1948.



A NEW, STREAMLINED, FULLY AUTOMATIC manufacturing unit has been added to the production-research facilities of Scholler Brothers Inc., Philadelphia, Pa. Covering more than five acres, the new plant is located in southern New Jersey close to Atlantic City. Special equipment at the new facility will permit the manufacture of all types of resins for use in the textile industry. Opening of the plant will not affect the operations of Scholler Brothers plants in Philadelphia and Canada, it is said.

Crompton & Knowles Shows Decrease In Sales, Earnings

Sharp decreases in sales and earnings were shown by Crompton & Knowles Corp. for the year ended December 31. The consolidated report of the firm and its subsidiaries showed a net, after taxes, of $338,761 or 76 cents a share for 1957 as compared with a net of $1,282,155 or $2.85 a share in 1956.

Crompton & Knowles did not disclose sales figures but reported a 17 per cent drop in 1957 volume. Billings of textile equipment and parts accounted for 63 per cent of the year's sales. During the year the company acquired the Russell line of can handling and vase packing machinery and established the Crompton & Knowles Packaging Corp.

Wrap-King Corp. was dissolved and its operations continue as a division of the new corporation. Some $700,000 was spent in 1957 for new production facilities, chiefly for machinery at the Worcester, Mass., plant.

Repeat Orders Received For Unifil Loom Winders

Repeat orders for Unifil Loom Winders have been received from all three mills in the Dover group, Universal Winding Co. reports. The three mills using Unifil are Dover Mill Co., Esther Mill Corp. and Ora Mill Co., all of Shelby, N. C. Based on the total number of Unifils ordered by these mills, they have the second largest installation of Unifil in the world. Universal reports that they have received seven repeat orders for Unifil since the first of the year but could not disclose the names of any of the other mills who had reordered. They also stated that another mill had placed its first order for Unifil Loom Winders. This brings to 21 the number of mills now using Unifil, the company reported.

Cook Machine Co. Acquired By Riggs & Lombard Inc.

Cook Machine Co. of Nashua, N. H., has been purchased by Riggs & Lombard Inc. of Lowell, Mass. As a wholly-owned subsidiary, the Cook company will round out Riggs & Lombard's line of textile finishing machinery. Cook Machine Co. has specialized in machines for the finishing of cotton and synthetic fabrics, while Riggs & Lombard Inc. supplies woolen and worsted

Clear sparkling colors produced with more economical dyestuffs are among the advantages assured by use of TEN-O-FILM Starches.

For a clear size that enhances **COLOR** use **TEN-O-FILM®** starches

For use with the new quick curing or polymerizing resins, you'll find no equal to TEN-O-FILM Starches.

Available in a range of fluidities to meet any required fabric stiffness, these unique starches retain their free-flowing characteristics at the lower temperatures employed in finishing.

Also, because both sizing and desizing operations using TEN-O-FILM are conducted at lower temperatures, with "bleeding" thereby reduced, yarns can be dyed with more economical dyestuffs.

More information? Just contact our nearest sales office or write to:

CORN PRODUCTS SALES COMPANY
17 Battery Place, New York 4, N. Y.

Corn Products makes these famous starches for the TEXTILE INDUSTRY:
EAGLE® · FOXHEAD® · GLOBE® · CLARO® · TEN-O-FILM® · GLOBE® Dextrines

manufacturers with wet finishing machines and other equipment. It is also the sole licensed manufacturer of the Compactor, a machine for the compressive shrinkage of fabrics. With the acquisition of the Cook company, Riggs & Lombard reports it will be able to offer a combined and complete line, including many new machines recently developed.

No change in the officers of the new subsidiary or its sales staff is contemplated, and there will be no changes in the selling staff or policies of Riggs & Lombard. The company says it expects the combining of the engineering staffs of the two companies to result in improved design and greater operating efficiency of both woolen and worsted machines, and cotton and synthetic textile machinery to be marketed by the joint sales staffs.

All manufacturing and personnel have been consolidated in the Riggs & Lombard plant at Lowell. The transition will not interrupt deliveries or service by either company, it is reported.

Babcock & Wilcox Office Moved To New Location

The Charlotte, N. C., district sales office of The Babcock & Wilcox Co.'s boiler division has been moved to Room 1100, Wachovia Bank Building, 129 W. Trade St., according to S. T. Mackenzie, vice-president in charge of sales for the division.

Metlon's Mylar Yarn Brings Quick Acceptance

Metlon's recently-introduced clear Mylar yarn, known as Crystal Mist, has brought quick acceptance from both weavers and knitters, the company reports. It has proved equally important in fashion and home furnishings fabrics. Metlon says its use in woven and knitted dress fabrics provides a feeling of sparkle. It is being combined with both natural and synthetic fibers and is also to be found in shoe fabrics and outerwear. Draperies, curtain and casement fabrics are also being woven with Crystal Mist for a toned-down look, with just a trace of gleam.

The yarn is reported to offer several advantages for those who want to create a subtle effect. It eliminates a large color inventory, since its characteristic is to pick up the color of the fiber with which it is used. (Its transparency gives the appearance of color.) In addition, resist dye effects are possible in piece dyeing. It can be used alone or in combination with other yarns, depending on the effect that is desired. Its yield to the pound is reported to be exceptionally high, making it not only attractive but an economical glitter yarn.

UNIVERSAL WINDING CO.'s Southern sales headquarters are now located at 3205 South Boulevard in Charlotte, N. C. A new one-story office building has been built especially for the company to take care of its need for larger quarters. Both the textile machinery and instrument sales and service staffs are housed in the new facility. The company also maintains a Southern sales office in Atlanta.

Davidson Industries Begins Operations

Coats & Clark Inc. has announced that its new affiliated company, Davidson Industries Inc., has commenced operations and will locate its sales office and manufacturing facilities at Toccoa, Ga. J. B. Clark, president of Coats & Clark, is the president of the new company which has executive offices at 430 Park Ave., New York City. Davidson Industries was recently incorporated as a Delaware corporation and has qualified in the states of Georgia and New York. The company will manufacture and sell the well-known Davidson spring used in package dyeing, and other textile machinery and equipment.

Davidson springs formerly were manufactured exclusively by Davidson, MacGregor Co. Ltd. of England and they will now be manufactured and sold exclusively by the Davidson Industries organization. Joe F. McMillan, formerly of Coats & Clark, has been appointed to head the selling organization of the new company. Eric B. Davidson, head of Davidson, MacGregor Co. Ltd., is a vice-president and director of Davidson Industries and will assist the new company in its start-up operation. Other officers of the company, all associated with Coats & Clark, are J. Bains and W. C. Wheeler, vice-presidents; W. D. Seidler, secretary; and A. MacFarlane, treasurer.

Dacron Plant To Be Built By Du Pont In Tennessee

The Du Pont Co. will build a multi-million dollar plant to produce Dacron polyester fiber on a site adjoining its rayon manufacturing unit at Old Hickory, Tenn., the company announced recently. The plant will be in addition to Du Pont's rayon and cellophane operations there.

The company said the new unit will be designed for an ultimate production of 56,000,000 pounds annually of Dacron staple and filament products, with initial staple production scheduled for the middle of 1959. Du Pont's first plant for making Dacron staple and filament yarn went into commercial production at Kinston, N. C., in March 1953.

"The decision to build our second plant for making Dacron reflects our confidence for the future of this product," the company said. "In just five years this fiber has won an important position for itself alone, and in blends with other fibers, in a variety of consumer products and industrial applications, and we are confident that markets for the product will continue to expand."

Warner & Swasey Reports Slight Order Increase

The Warner & Swasey Co. points out in its annual report that orders for textile machinery held at a steady and slightly increasing level during 1957. In its outlook for 1958, the company said that an increase in its textile machinery business seems to be assured. The company entered the textile machinery business following World War II as part of a diversification move.

Net earnings of $4,356,409 or $4.38 per common share were reported by the company for 1957 as compared to $4,404,379 or $4.57 a common share in 1956. Total product income for 1957 was $56,354,408 with textile machinery accounting for $2,086,311. The firm produces pin drafters, converters, twister-winders and weaving machines.

Ciba Co. Relocating In Northern New Jersey

Announcement has been made by Ciba Co. Inc. of the erection of a modern one-story, streamlined building at Fair Lawn Industrial Park in northern New Jersey within the greater New York area to replace entirely Ciba's Greenwich Street facilities in New York City. In making the relocation in nearby northern New Jersey, special emphasis has been placed upon the design and equipment of technical laboratories and related facilities, the company reports.

Control Systems Company Established By Hancock

Establishment of a new operating concern, Control Systems Co., was announced recently by Hancock Industries. The new company will assume responsibility for the development, design and marketing phases of an electro-mechanical control and monitoring system, applicable to textile manufacturing processes.

The new system, named The Hancock Telecontrol, is currently manufactured at Control Systems Co.'s Jackson, Mich., plant. Manufacturing is done in co-operation with Hancock's electronics subsidiary, Computer Measurements Corp. of North Hollywood, Calif.

The company expects it to find wide acceptance in plants seeking to improve their manufacturing techniques through a system enabling them to control and monitor their entire production. With a low initial investment cost, it is said to aid in eliminating much of today's unnecessary downtime by improving in-plant communication methods. The Hancock Telecontrol also provides management with immediate and timely information about current production. And it operates without need for any paperwork as it is known today, the company reports.

National sales plans have been formulated with initial concentration mainly on production applications in such industries as textiles.

PROVE QUALITY BY THE SPECTOGRAPH TEST

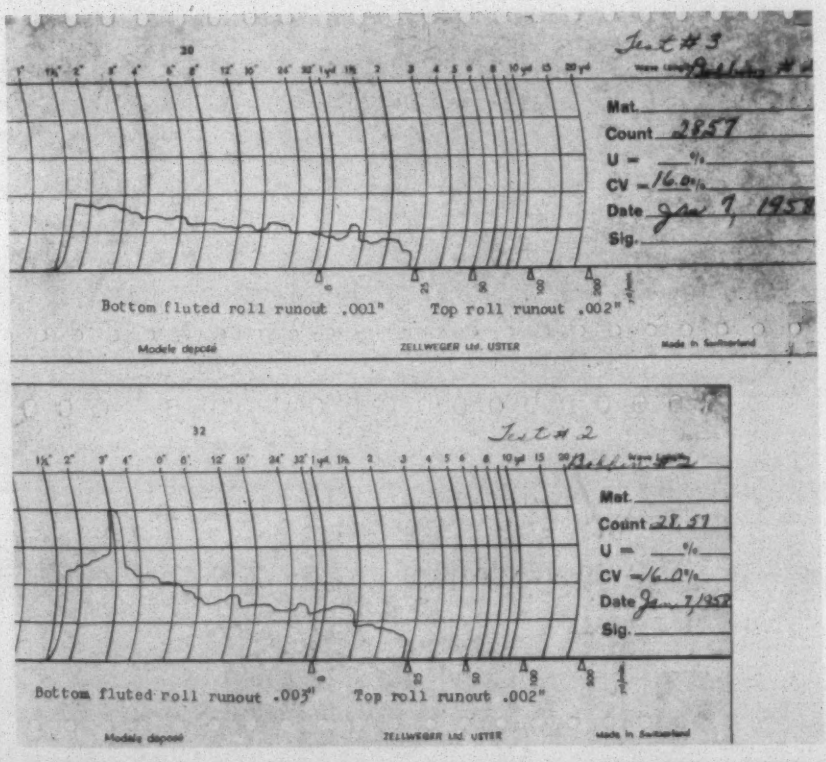
HIGH DRAFTS REQUIRE PERFECTLY FLUTED ROLLS WITH A MINIMUM OF RUNOUT.

F. A. YOUNG'S PERFECTLY FLUTED STEEL ROLLS WITH .002 RUNOUT GUARANTEED.

QUALITY YARN DEPENDS ON QUALITY ROLLS — KNOW YOUR ROLLS
TRY THIS SPECTOGRAPH TEST

Following are the results of two spectograph tests.

Draft of 46—same roving—same cradle—same top rolls (nyaf® Anti-friction)



Test #3, taken with new F. A. Young steel rolls using same drafting and roving as in Test #2. Bottom Fluted Roll Runout one thousandths of an inch (.001)

(Tests show that 80% of OUR New Rolls have runout of .001 or less.)

NOTE:
Same Top Rolls used in both tests having runout of two thousandths of an inch (.002)

Test #2, taken with Bottom Fluted Roll having runout of three thousandths of an inch (.003)

IMPROVED MANUFACTURING PROCESSES ENABLE F. A. YOUNG MACHINE COMPANY TO GUARANTEE NOT OVER .002 RUNOUT ON INDUCTION HARDENED, FLUTED STEEL ROLLS.

QUALITY ROLLS PRODUCE PATTERNLESS YARN

F. A. YOUNG MACHINE CO.

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textile bulletin

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TEXTILE BULLETIN is devoted to the dissemination of information and the exchange of opinion relative to the spinning and weaving phases of the textile industry, as well as the dyeing and finishing of yarns and woven fabrics. Appropriate material, technical and otherwise, is solicited and paid for at regular rates. Opinions expressed by contributors are theirs and not necessarily those of the editors and publishers. ¶ Circulation rates are: one year payable in advance, $1.50; two years payable in advance, $2.00; one year, Canada, $3.00; one year, other countries in Postal Union, $5.00; single copies, 25 cents. ¶ A companion monthly journal, THE KNITTER, is published by Clark Publishing Co. and devoted to the interests of the knitgoods manufacturing industry.

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The Greenville Show

A NEW 16,000-square-foot addition to Textile Hall in downtown Greenville, S. C., will push exhibit space well beyond the 100,000-square-foot mark for the 20th Southern Textile Exhibition this coming October 6-10, inclusive, according to officials of Textile Hall Corp.

The event, an institution in the textile industry since 1915, provides the equivalent of a five-day window shopping tour for management, research directors and other mill representatives. While from the beginning it's been known as the Southern Textile Exposition, one or more exhibits from several foreign countries have in recent years given the show an international scope and atmosphere. Each show since the first one 43 years ago has been bigger than the preceding exposition. It's the same thing for 1958—more exhibits and bigger and more elaborate exhibits, with a larger-than-ever number of them in actual operation under simulated mill conditions.

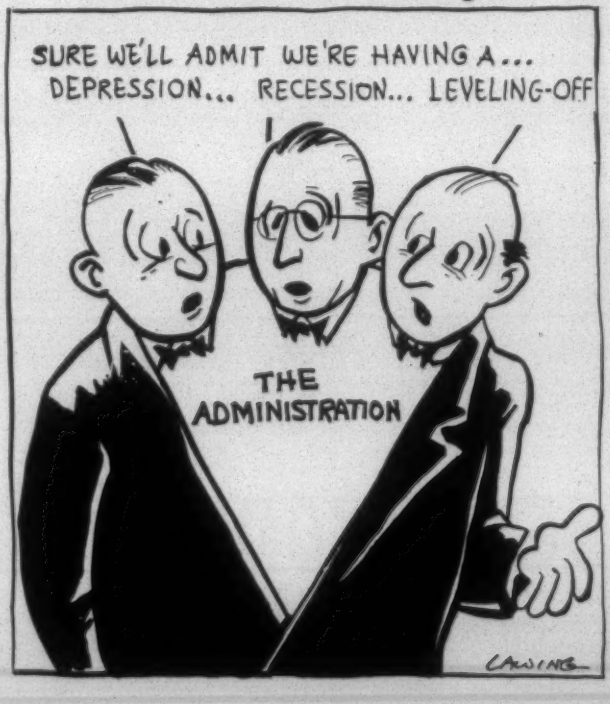
The one-story masonry annex to be constructed in time for the 1958 exposition will be built on the Academy Street side of Textile Hall and will front on West Washington Street. Plans for the new permanent annex have been drawn by the McPherson Co. With completion of this new annex, it is pointed out by James H. Woodside, president of Textile Hall Corp., the space in Textile Hall and its permanent annexes will be about double that which was available for the 1950 exposition.

The 1958 exhibitors include virtually every manufacturer of basic processing machinery and equipment in every part of the nation. A vast amount of research in textile machinery manufacturing, of course, has been striking hard for speedier mill production and improved product quality. Since the 1956 exposition a number of developments in new high speed machinery have been reported and a few, considered rather revolutionary in concept and design, are said to be undergoing secret mill trial prior to official announcement or public showing.

The trend at the Greenville expositions in recent years has been toward the showing of a greater volume and variety of heavy basic high speed machinery, although the labyrinth of exhibits encompass just about everything a mill uses or can use. Attendance, limited almost entirely to mill personnel, has also increased with each exposition. In 1956 it was estimated at 37,000. Exposition officials, however, say they measure the success of an exposition not in terms of attendance but rather in terms of bringing together machinery, equipment and supply manufacturers and the mill men who use their products.

Suffice it to say, the sharp interest of mill men never

The Last Word From Washington



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lags, for since World War II the flow of new and improved machinery—the result of pouring large sums into research—has been fairly constant, providing not only savings in manufacturing costs but speedier production and a better product, whether the processed material is cotton, synthetic or chemical fibers, blends, wool or something else.

The board of directors of Textile Hall Corp. is made up of some of the top men in the textile and related industries. W. G. Sirrine, president of the corporation in its earlier years, is board chairman. Mr. Woodside is president and treasurer, and Sydney Bruce, Piedmont Plush Mills, is vice-president.

The board members include, in addition to Messrs. Sirrine, Woodside and Bruce, the following: Donald Comer, Avondale Mills, Birmingham, Ala.; Robert I. Dalton, Whitin Machine Works, Charlotte, N. C.; L. O. Hammett, Chiquola Mfg Co., Honea Path, S. C.; Ellison S. McKissick, Alice Mfg. Co., Easley, S. C.; W. S. Montgomery, Spartan Mills, Spartanburg, S. C.; George M. Wright of Abbeville, S. C., retired mill executive and president of Sirrine Textile Foundation; Charles E. Daniel of Greenville, head of Daniel Construction Co.; G. A. Gibson of Greenville; Ben F. Hagood, president of Pickens Mill at Pickens, S. C.; F. E. Grier, president of Abney Mills, Greenwood, S. C.; Roger Milliken, president of Deering, Milliken & Co.; R. D. Sellers, president of Southern Bleachery & Print Works Inc.; Earle R. Stall, vice-president of Cone Mills Corp.; C. E. Hatch, W. W. Pate, Ernest Patton and Harold R. Turner, all of Greenville. The executive committee consists of Messrs. Bruce, Hatch, Patton, McKissick, Turner and Woodside.

Machinery and equipment companies indicate that their exhibits this year will strike very hard at mill obsolescence. And most of them swung into the present year with confidence of their capacity to handle any foreseeable demand.

Centered as it is in the heart of the industry, the Greenville show is thereby able to attract supervisory personnel and technicians as well as top textile executives. A well-planned program has been worked out for accommodating both exhibitors and visitors in Greenville as well as in hotel and motor court facilities in Anderson, Clemson and Spartanburg, all within 33 miles of Textile Hall.

For the 1958 show, Textile Hall as usual will undergo a face-lifting and sprucing up. And, while October weather is unpredictable and may be pleasantly cool, in event it should turn out to be unseasonably warm, there is a forced draft ventilation system to make the main exposition hall and the annexes comfortable even on hot days. The show will run each day from 9 a.m. to 6. p.m.

In Georgia the earliest mill to have remained in business to the present day is the Athens Mfg. Co. of Athens. Several mills were launched in Georgia between 1810 and 1828, the year the Athens Mfg. Co. was chartered, but none of them were successful or lasted very long. In the 1830s Athens was often referred to as the Manchester of the South.

TEXTILE INDUSTRY SCHEDULE

— 1958 —

*Mar. 26-28 (W-F)—**SOUTHEASTERN PERSONNEL CONFERENCE**, Duke University, Durham, N. C

Mar. 28 (F)—Spring meeting, **SOUTH CAROLINA DIVISION, SOUTHERN TEXTILE ASSOCIATION**, Clinton High School, Clinton, S. C.

Apr. 2 (W)—**A.A.T.T.**, Della Robbia Room, Vanderbilt Hotel, New York City.

Apr. 10-12 (Th-Sa)—Annual convention, **AMERICAN COTTON MFRS. INSTITUTE**, Hollywood Beach Hotel, Hollywood, Fla.

*Apr. 11 (F)—Spring meeting, **WASHINGTON SECTION, A.A.T.C.C.**, National Housing Center, Washington, D. C.

Apr. 11-13 (F-Su)—Spring meeting, **PIEDMONT SECTION, A.A.T.C.C.**, Washington Duke Hotel, Durham, N. C.

Apr. 12 (Sa)—Spring meeting, **NORTHERN NORTH CAROLINA-VIRGINIA DIVISION, SOUTHERN TEXTILE ASSOCIATION**, Mineral Springs High School, Winston-Salem, N. C.

Apr. 16-18 (W-F)—Annual meeting, **ALABAMA TEXTILE MANUFACTURERS ASSOCIATION**, Hotel Buena Vista, Biloxi, Miss.

*Apr. 18 (F)—Spring meeting, **EASTERN CAROLINA DIVISION, SOUTHERN TEXTILE ASSOCIATION**, Turnage's Bar-B-Cue, Durham, N. C.

*Apr. 19 (Sa)—Spring meeting, **TEXTILE OPERATING EXECUTIVES OF GEORGIA**, Georgia Tech, Atlanta.

Apr. 23-25 (W-F)—Annual meeting, **COTTON MANUFACTURERS ASSOCIATION OF GEORGIA**, Boca Raton Hotel, Boca Raton, Fla.

Apr. 24-26 (Th-Sa)—55th annual convention, **PHI PSI FRATERNITY**, Ben Franklin Hotel, Philadelphia, Pa.

Apr. 24-26 (Th-Sa)—National convention, **DELTA KAPPA PHI FRATERNITY**, The New Bedford Hotel, New Bedford, Mass.

Apr. 29-30 (Tu-W)—Spring meeting, Technical Advisory Committee and Board of Trustees, **INSTITUTE OF TEXTILE TECHNOLOGY**, Charlottesville, Va.

Apr. 30-May 1 (W-Th)—Spring meeting, **THE FIBER SOCIETY**, The Clemson House, Clemson, S. C.

May 3 (Sa)—Spring meeting, **ALABAMA TEXTILE OPERATING EXECUTIVES**, Thach Auditorium, Alabama Polytechnic Institute, Auburn, Ala.

May 7 (W)—**A.A.T.T.**, Della Robbia Room, Vanderbilt Hotel, New York City.

May 19-24 (M-Sa)—**NATIONAL COTTON WEEK**, sponsored by the National Cotton Council of America.

May 26-29 (M-Th)—**NATIONAL PACKAGING CONFERENCE AND EXPOSITION** (sponsored by American Management Assn.), New York Coliseum, New York City.

May 29-31 (Th-Sa)—Annual meeting, **SOUTH CAROLINA TEXTILE MANUFACTURERS ASSOCIATION**, The Cloister, Sea Island, Ga.

*May 30-31 (F-Sa)—Annual meeting, Cotton Buyers and Classers Division, **NORTH CAROLINA TEXTILE MANUFACTURERS ASSOCIATION**, Grove Park Inn, Asheville, N. C.

June 4 (W)—**A.A.T.T.**, Della Robbia Room, Vanderbilt Hotel, New York City.

June 19-21 (Th-Sa)—Annual convention, **SOUTHERN TEXTILE ASSN.**, The Grove Park Inn, Asheville, N. C.

June 22-27 (Su-F)—61st annual meeting, **AMERICAN SOCIETY FOR TESTING MATERIALS**, Hotel Statler, Boston, Mass.

Sept. 9-10 (Tu-W)—Fall meeting, **THE FIBER SOCIETY**, Montreal, Canada.

Sept. 11-12 (Th-F)—Annual meeting, **COMBED YARN SPINNERS ASSOCIATION**, The Cloister, Sea Island, Ga.

*Sept. 25-26 (Th-F)—Fall meeting, **TEXTILE QUALITY CONTROL ASSOCIATION**, The Grove Park Inn, Asheville, N. C.

Oct. 1-2 (W-Th)—Seventh annual **CHEMICAL FINISHING CONFERENCE** (sponsored by the National Cotton Council), Washington, D. C.

Oct. 6-10 (M-F)—**SOUTHERN TEXTILE EXPOSITION**, Textile Hall, Greenville, S. C.

*Oct. 9-10 (Th-F)—Annual meeting, **NORTH CAROLINA TEXTILE MANUFACTURERS ASSOCIATION**, Carolina Hotel, Pinehurst, N. C.

Oct. 14-17 (Tu-F)—Fall meeting, **A.S.T.M. COMMITTEE D-13 ON TEXTILES**, Sheraton-McAlpin Hotel, New York City.

Oct. 25 (Sa)—Fall meeting, **ALABAMA TEXTILE OPERATING EXECUTIVES**, Thach Auditorium, Alabama Polytechnic Institute, Auburn, Ala.

Oct. 30-Nov. 1 (Th-Sa)—National convention, **AMERICAN ASSN. OF TEXTILE CHEMISTS & COLORISTS**, Conrad Hilton Hotel, Chicago, Ill.

Nov. 7-8 (F-Sa)—**TEXTILE SEMINAR** (sponsored by the University of Georgia Division of Clothing and Textiles in Extension, Teaching, Research), Georgia Center for Continuing Education, Athens, Ga.

(M) Monday; (Tu) Tuesday; (W) Wednesday; (Th) Thursday; (F) Friday; (Sa) Saturday

**Listed for the first time this month.* ‡*Tentative listing.* †*Changed or corrected from previous issue.*

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Sweaters are a necessity in the wardrobes of the younger set. The more colorful, the better. With GDC's Genacryl® dyes, you can match the popular shades shown here or create trend-setting new ones on Orlon, other acrylics, and wool-acrylic mixtures.

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as a mutual swelling agent for both dye and fiber. In this respect there will be a necessity for co-operative effort on the part of fiber producer, binder producer and fabric manufacturer as there has been in the past in developing these novel fabrics. Ultimate acceptance of non-wovens by the buying public will in large measure be influenced by our ability to finish the materials and obtain the desired characteristics.

Engineering Of Non-Woven Fabrics For SPECIFIC APPLICATIONS

By
D. V. PROBASCO
Wellington,
Sears Co. Inc.
New York, N. Y.

The following paper was delivered before the New York Board of Trade's symposium on non-woven products, January 28, at the Sheraton-Astor Hotel in New York City. In it, Mr. Probasco lays some ground rules for the development of new products. These rules include: (1) analyzing application; (2) outstripping competition; (3) customer education; and (4) avoidance of mis-application.

THERE are two schools of thought on dealing with new products. One is to make the product—which might be described as the results of an idea originating either in research or manufacturing—and then find a place to sell it. The second method is to take the idea or process for making this new product and adapt it to the useful purpose of making a product or line of products to fill a specific need.

By this procedure it is possible through engineering sales to fully exploit any new process. The latter method is the one that is to be dealt with in designing non-woven fabrics to fit a particular end use.

An architect designs a new school building only after a clear understanding of the functions that are expected of the completed structure. The same approach in designing a new fabric, be it non-woven or otherwise, is equally sound and would follow in this fashion.

Make an analysis of end use to determine if this application is sound for a non-woven material. Could it best be served by some other fabric? Find the essential physical properties such as width, weight, color, hand, tensile and tear strengths, gauge, etc. Which properties are most important and which are those that may be sacrificed in preference to more important ones? Is the application's market of such size as to make it a specialty application with limited volume? If so, do the profit possibilities offset the limited volume? Is it one with wide application that justifies the necessary development indicated with a normal profit and how easily can another producer duplicate the product?

Economically Sound?

Is the product economically sound? Can it stand on its own feet in competition with materials other than fabrics and does it show a fair return on investment of time and money necessary to develop and produce it? Does it require new or modified equipment? Is it something that other producers can easily duplicate after the initial work is done? Not infrequently the difficult application is the best one because it is hard to copy by someone with less know-how or inferior equipment.

These points may seem repetitious and unduly mercenary. But those in the business of producing non-woven materials soon learn that all of the ideas and possibilities must be screened very carefully in order to make the best use of the manpower and facilities available to any one organization.

What are the problems to be encountered in merchandizing? Will this new product sell itself or is it one that requires a large investment in advertising and customer education? Does it go to many users or to relatively few? What is involved in packaging and are the individual orders large or small and what inventories are required and where located? What are the freight rates and will the product be sold F.O.B. mill or delivered?

Product Design

Assuming that all of the foregoing can be answered favorably then the design of the product can be undertaken. The new fabric must be designed by the following procedure. Selection of proper fiber or combination of fibers—preferably a standard fiber mix that already exists in the mill but by all means the best possible combination to do the job well. The cost of the fibers is, of course, very important and is the first step toward performance, appearance and acceptability by the customer since a job well done for the money spent is good business practice in any product. Type of web used is often quite important for best performance, that is, random, crosslayed or unidirectional. Proper weight is always important as it is the base for most all essential properties. Uniformity of web cannot be over emphasized for, with all other things equal, quality is paramount.

Selection of the proper binder is the next step and is no less important than the web. In fact in most cases the type and amount of binder is likely to be much more critical than fiber selection. Many factors are involved such as tensile and tear strength, hand, color washability, dry cleanability, etc. Compatibility with other materials involved in the finished product is no doubt the most im-

portant and very likely the most difficult to achieve. Proper amount and uniform control of binder content are equally important.

Finishing Procedure

Many non-woven structures, particularly the durable type, require secondary or finishing steps. These may consist of re-saturation, curing, washing, dyeing and the like. All of these, of course, must be carefully controlled and are determined according to the end use. Several years ago, when this industry began, it was the popular conception that a non-woven fabric could be produced in one simple step with the assumed result that these wondrous new materials would cost only a fraction of the price of woven fabrics. Somehow all sight of the cost of raw materials was lost, the need for durable binders was never considered, or at least few dreamed that binders were generally more expensive than fibers and therefore they offset to a large extent the elimination of spinning and weaving.

Who would have ever thought that these new miracle materials would require comparable expense in decorating that accepted textiles do, or that they would need even more selling expense in the form of consumer education and promotion to assure their sales and acceptance. Of course, the retailer, whether department store or automobile dealer, must have the same markup or perhaps even better since a new and often unproven product had to be dealt with.

In spite of all these obstacles, however, a new phase of an old industry is slowly emerging and when it is considered that the textile industry is many hundreds of years old, then this newborn babe that is arousing so much interest begins to be very important. Not so much from the standpoint of being a revolutionary cheap process for producing the usual fabric, but more from the basis of being an addition to one of the world's oldest and largest industries and possibly in years to come, "The Atomic Age of Textiles."

In summing up, the following important steps are indicated:

(1) Analyze the application carefully.

(2) Make certain that non-woven materials can do the job against all competition.

(3) Educate customer or end user to appreciate abilities of non-wovens to do the job.

(4) Deliver and merchandise a product so soundly designed and well engineered that any other material will have a difficult and perhaps impossible job of competing.

(5) Above all else, avoid misapplications wherein either the wrong non-woven material is used or a non-woven is used when another material is superior for the purpose.

These rules are difficult to follow but on that basis will be built a tremendous new industry in the years to come.

Community Salutes Opp And Micolas Mills

Citizens of Opp, Ala., and surrounding Covington County will salute their oldest industry, the Opp and Micolas Cotton Mills, March 31-April 5. The week-long celebration, sponsored by the Opp Chamber of Commerce, is designed to show the area's appreciation of the contributions the mills have made to the region's economic and social progress. Special participation events are being planned for school children, women's groups, civic clubs, farm groups, merchants and others.

What Are You Doing About

WASTE CONTROL

By WILLIAM SPROULE

PART ONE

How do you control your waste? Proper waste control can spell out the difference between profit and loss in your plant. Some timely suggestions are contained in the following article, the first of a two-part series on this important topic.

THE control of waste is vital to a smooth operating mill, as every good mill man realizes. This is one of management's controls that warrants the utmost attention due to the amount of dollar loss or gain from waste. With present market conditions, excess waste can be the difference between being in the red or black.

However, the purpose of a waste control program is not only to reduce the amount of waste made but also to control the amount of waste. There are some operations in manufacturing that require a definite amount of waste removal, and if this waste is not removed the subsequent operations will be affected by either poorer running conditions or excess cleaning. The final result will be an inferior end product.

The control of waste is accomplished through an organized system of collecting, routing, weighing, classifying and reporting the amount of waste—both reworkable and none-reworkable—made in all processes that the raw material passes through from the time it is opened until it is finished and ready for shipment.

The actual amount of waste can be converted to a percentage figure for comparison with a standard. All waste classifications exceeding the standard should be expressed in a dollar loss, because we are primarily interested in knowing weekly just how much the excess waste is costing. A study of the waste report enables management to correct those waste categories which were contributing to the largest monetary loss.

The installation of a good waste control program necessitates a thorough survey of present processing methods and conditions in order to establish the best methods of collecting, routing, weighing, classifying, reporting and establishing standards. This is especially true since no two mills are identical and every mill will have to be given individual consideration. Since it is a good size task to properly set up a waste control program, it should be installed properly the first time. If done properly a substantial monetary savings should be realized.

This phase of the waste control program is every bit as important as the other phases—for after all the workability of the program rests with supervision and all those directly involved in the actual handling of waste. Should either of these fail then the whole program suffers.

The entire program (standards, including how they were established, routing, etc.) should be gone over thoroughly with supervision and in turn all supervisors should brief all those persons responsible to him who are responsible for making or handling waste. It is also a good idea to illustrate with charts or posters, for visual aids stick where words often fade away.

Waste Collection

Once the waste has been made, some type of container and its location must be considered. For example, a spinner should be provided with an apron. The apron should have several divisions, one for roving waste and one for scavenger waste, to save the spinner from walking to a receptable to deposit the waste. You can be sure that the average spinner will drop the waste on the floor before she will walk to a container if she is not provided with an apron. Also, the receptacles should be spaced throughout the room at frequent intervals, at easily accessible locations, properly identified by department and waste classification, and large enough to store waste until it is collected and routed for weighing.

A method of collecting and handling waste must be established that will fit each operation in the mill. To further illustrate this, a few of the major waste categories for a cotton mill will be considered. Figure 1 shows the waste classification, where the waste was made, the type of receptacle the waste was collected in, and by whom the waste was collected.

Routing And Weighing

A chart as shown in Figure 2 has been drawn up to properly illustrate the routing and weighing of waste. This chart contains the waste classification, type of receptacle the waste should be transported in to its disposal point or to storage point for re-use as in the case of reworkable waste, by whom the waste should be weighed and recorded, the exact location where the waste should be weighed, and how often the waste should be collected.

Departmental Reporting Of Waste

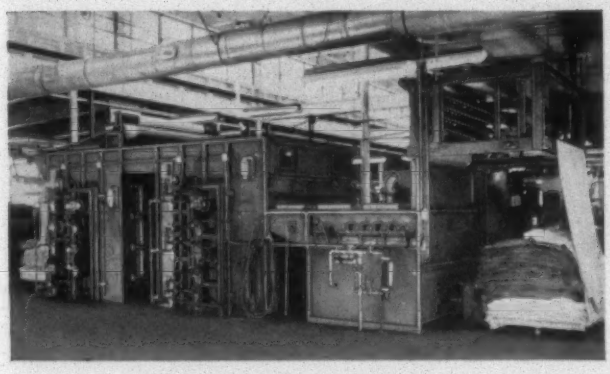
Now that the method of separating, collecting, transporting and weighing has been covered, various departmental

Figure 1

WASTE CLASSIFICATION	WHERE MADE	TYPE RECEPTACLE	BY WHOM COLLECTED
Opening Motes	Opening Line	Sack	Opener Tender
Card Flat Strips	Card	Box	Card Tender
Drawing Sliver	Draw Frame	Can	Draw Frame Tender
Roving	Roving Frame	Can	Roving Frame Tender
Filling Thread	Quill Stripper	Can	Quill Stripper Tender
Spin. Pneumafil	Spinning Frame	Can	Spinner
Spooler Thread	B. C. Spooler	Can	Tailing Mach. Tender
Slasher Hard Thread	Slasher	Bundle	Slasher Helper
Tie-in Hard Thread	Tie-in Machine	Bundle	Tie-in Helper
Weave Warp Thread	Loom	Sack	Warp Man
Weave Rags	Loom	Sack	Warp Man
Cloth Room Seams	Cloth Room	Bundle	Sweeper

The Fleet Line for Synthetics AND Woolens & Worsteds

DERBY CONTINUOUS DRY CLEANER



Distilling Equipment (located below machine) effects important savings through solvent and oil recovery.

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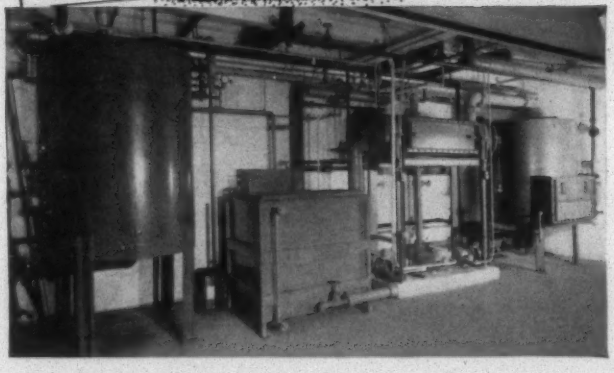

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1. Efficiently removes finishing oils, used in production of the fiber and in manufacturing operations, which are difficult to remove in fulling and scouring.
2. Removes excess dyestuffs, reduces crocking.

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1. Valuable to facilitate carbonizing in grey.
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NOTE: One-man operation, with production as high as 30 yards per minute on 14 to 16 oz. woolens. This machine made by Riggs & Lombard *exclusively*.

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A. Harold Zayotti, Jr., P. O. Box 125, Riverton, N. J. • H. E. Mott Co., Limited, Brantford, Ontario, Canada

Figure 2

WASTE CLASSIFICATION	TYPE RECEPTACLE	WEIGHED & RECORDED BY	WEIGHING POINT	COLLECTION FREQUENCY
Opening Motes	Sack	Opener Tender	Cotton Whse.	once/shift
Card Flat Strips	Box	Oiler	Opening Room	once/shift
Drawing Sliver	Box	Utility Man	Opening Room	once/shift
Roving	Box	Utility Man	Opening Room	once/shift
Filling Thread	Sack	Quill Stripper Tender	Spooler Room	once/shift
Warp Pneumafil	Sack	Oiler	Spooler Room	once/day
Spooler Thread	Sack	Yarn Man	Spooler Room	once/shift
Slasher Hard Thread	Sack	Slasher Helper	Spooler Room	once/day
Tie-in Hard Thread	Sack	Tie-in Helper	Spooler Room	once/day
Weave Warp Thread	Sack	Warp Man	Cloth Room	once/day
Weave Room Rags	Sack	Warp Man	Cloth Room	once/day
Cloth Room Seams	Sack	Sweeper	Cloth Room	once/day

forms are necessary for recording these weights by classification. These forms should contain the following, and should be used to furnish the necessary information for the Weekly Waste Report.

(1) Date—week ended and daily
(2) Waste classification
(3) Department name
(4) Initialed by supervisor.

Waste Divisors

All waste percentages are based upon the pounds entering each department or process; therefore it is necessary to establish a procedure to accomplish this. Since a waste program is pretty much tailor-made to fit each individual mill, a few operations for a sample mill are presented.

Pre-opening based on the gross bales of cotton opened.

Opening (opening motes) based on gross bales of cotton opened minus tare weight (bagging and ties) plus reworkable waste.

Carding (flat strips) based on hanks made on finisher drawing converted to pounds plus card waste, plus drawing waste, and minus finisher drawing front sliver waste, since this has already been added into production.

Drawing (drawing sliver) based on hanks made on finisher drawing converted to pounds plus drawing waste, and minus finisher drawing front sliver waste.

Roving (roving waste) based on roving hank clock production, converted into pounds, plus roving sliver waste and clearer waste.

Filling spinning (filling thread waste) based on filling spinning hank clock production, converted into pounds, minus standard percentage idle spindles, plus all filling spinning waste except Pneumafil waste and thread waste since these waste categories have already been included in production because production has been based on hanks converted into pounds.

Warp Spinning (warp spinning Pneumafil waste) based on warp spinning hank clock production converted into pounds, minus standard per cent idle spindles, plus all warp spinning waste except Pneumafil waste and thread waste.

Spooler (spooler thread waste) based on spooler production in pounds plus spooler waste, and plus knotter waste.

Slasher (hard thread waste) based on warper production plus selvage yarn supplied on cheeses or tubes.

Tying-in (hard thread) based on total sized production off slashers. Should all production not be routed through the tying-in machine, then slasher production should be pro-rated in proportion to the amount passing through the tying-in machine.

Weaving (warp waste) based on total weave room production (actual pounds) plus warp waste, plus rags, plus filling waste, and plus sweeps.

Cloth Room (seams) based on total pounds of cloth graded (actual pounds) plus cloth room waste.

Waste Standards

Waste standards warrant the utmost attention and should be kept up to date at all times. This is probably more important now due to present market conditions, where management is experimenting with many blends for development of new and better fabrics or even running lower grade stocks to offset the decline in prices. We all realize we can't compare unlike conditions and nobody would attempt to compare apples with oranges. Yet how many of us are conscious of the fact that we aren't running the same raw material this year as last.

In establishing waste standards we must take into consideration the fact that there are basically three types of waste standards. Realizing this the task of establishing standards becomes much easier and more accurate, for these standards must be accurate if they are to mean anything. The first of these we will refer to as a standard or fixed type and includes such classifications as bagging and ties which are fixed throughout the industry. The second type of standard we will refer to is the experimental type, and this type is basically arrived at by experimentation.

To illustrate this standard, let's take the waste classification called motes. The standard for motes should be arrived at through testing, using testing equipment such as the Shirley Analyzer. With the advances made in testing equipment in recent years the task of establishing these waste standards become relatively simple. However, even with this, the type of opening machinery must also be considered and proper allowances made.

The third type of standard we will refer to is the calculated standard. This type of standard should be used wherever possible, for it is the most reliable especially in those mills where other mill controls are in use. For with these controls in use, such things as package weights, end breaks, grains per strip, and production speeds have been established thus simplifying the task of setting up these standards. To further illustrate this, a few of these calculated standards are shown below.

Calculated Waste Standards

Flat Strip Waste (%)

Data: (A) Grains per strip—20 grams
(B) Flats per minute—2.0
(C) Lbs. per card per hour—10.0
(D) Minutes per hour—60
(E) Grains per pound—7000
(F) Percentage

Formula

$$\frac{A \times B \times D \times F}{E \times C} = \% \text{ flat strips}$$

$$\frac{20 \times 2.0 \times 60 \times 100}{7000 \times 10} = 3.43\% \text{ flat strips}$$

Pneumafil Waste (%)

Data: (A) End breaks per 1000 spindle hours—40
(B) Average down time per end break (mins.)—5
(C) Spindle hour basis—1000
(D) Percentage
(E) Minutes per hour—60
(F) Per cent ends down at doff (%)—4
(G) Average end down time at doff (mins)—1.0
(H) Running time per doff (mins.)—200.0

Formula

Part I—Per cent waste due to end breaks while running

$$\frac{A \times B \times D}{C \times E} = \text{Per cent waste due to end breaks while running}$$

$$\frac{40 \times 5 \times 100}{1000 \times 60} = .33 \text{ per cent waste due to end breaks while running}$$

Part II—Per cent waste due to end breaks while doffing

$$\frac{F \times G \times D}{H} = \text{Per cent waste due to end breaks while doffing}$$

$$\frac{.04 \times 1.0 \times 100}{200} = .02 \text{ per cent waste due to end breaks while doffing}$$

Part I + Part II = Per cent Pneumafil Waste
.33 + .02 = .35 per cent Pneumafil Waste

Weaving Warp Waste (%)

Data: (A) Yards of waste yarn at beam run out—3.0
(B) Yards of waste yarn at start up—1.0
(C) Yards of yarn at full beam—2500
(D) Percentage factor

Formula

Part I Pull-over standard (%)
.05 per cent pull-over waste

Part II Waste at run out (%)

$$\frac{A \times D}{C} = \text{Per cent waste at run out}$$

$$\frac{3 \times 100}{2500} = .12 \text{ per cent waste at run out}$$

Part III Waste at start up (%)

$$\frac{B \times D}{C} = \text{Per cent waste at start up}$$

$$\frac{1.0 \times 100}{2500} = .04 \text{ per cent waste at start up}$$

Part I + Part II + Part III = Weaving warp waste (%)

.05 + .12 + .04 = .21 per cent weaving warp waste

Weekly Waste Control Report

The weekly waste report should be designed to furnish the following information:

(1) Waste divisor which is the pounds entering each process.
(2) Actual pounds of waste by process and type of waste.
(3) Standard pounds of waste by process and type of waste.
(4) Actual waste percentage by process and type of waste.
(5) Standard waste percentage by process and type of waste.
(6) Cumulative waste percentage by process and type of waste.
(7) Dollar loss by process and type of waste.
(8) Total non-reworkable and reworkable pounds of waste.
(9) Total non-reworkable and reworkable percentages of waste.
(10) Total non-reworkable and reworkable dollar loss.

Dollar Loss Per Pound

This phase of the program should be designed to show the actual loss in dollars due to the excess amount of waste from standard. The dollar loss should be arrived at by adding the overhead and labor incurred to the cost of the raw material, and then subtracting the selling price received for the waste. To further illustrate this, let's take the waste category tilted flat strips and follow it through to arrive at the dollar loss per pound figure.

Data

(A) Raw material cost per pound.....$.3500
(B) Labor cost through carding .....$.0119
(C) Expenses through carding .....$.0141
(D) Price received for flat strips sold.....$.2350

Formula

Following the instructions above, the following formula applies:

A + B + C — D = Dollar loss per pound

Calculations:

$.3500 + $.0119 + $.0141 — .2350 = $.1410
Dollar loss per pound = $.1410

Potential Dollar Loss

Since we have taken the waste category of flat strips, let's see how much it would cost if we should take out strips in excess of standard by the amount of .5 per cent in a mill producing 100,000 pounds per week. This means that the mill would be making 500 pounds of flat strips per week in excess of standard. The 500 pounds of waste at a dollar loss per pound of $.1410 would result in an annual loss in excess of $3500. From this one can easily see the potential dollar loss because of an inadequate waste control program.

Co-Operation:

A Means To Textile Success

By FRANK VOGEL, Consultant on Statistical Quality Control

This article supports the proposition that nothing pays greater dividends in the textile industry than co-operation among the executive staff. Several methods for achieving harmonious relations are outlined and the writer says that by using them, or similar ones, the operation can function to its greatest degree of efficiency.

IN no branch of industry does co-operation among the executive staff pay greater dividends than in the textile industry. The writer, who has had contact with mills of various sizes, has in mind that type of co-operation due to the co-ordinating efforts of each department head in the mill, from the cotton opening section through to the finishing department, whether it be yarn or cloth.

Most operating executives, from the lowest to the highest, realize that teamwork is necessary for maximum efficiency of the mill but due to human frailties this ideal is not always attained. Human nature, psychologically speaking, is of such a composition that each executive instinctively strives to better himself—and, sometimes without considering his relationship to his fellow executives, or to the best interests of the mill. Here is where the general superintendent, or the general manager, as the case may be, steps into the picture. Without the energetic leadership of the top man there can be no such complete co-ordination of effort of every department as will assure the most successful operation of the mill.

The slogan of every mill should be "the largest production of the best quality at the lowest cost." Various methods for attaining this goal will be discussed in this article. No effort will be made to place the different items taken up in any manner indicative of the importance attached to each. What is of prime importance to one mill may only be of secondary import to another mill.

First of all, there should be a weekly meeting of all the department heads, where the mill is large, or of overseers or second-hands where the mill is small. These meetings should be held in some specially appointed place where there will be no unusual outside disturbance during the period of the meeting. An hour, approximately, will generally suffice to discuss the various matters brought up.

The persons attending the weekly meetings will include: (1) general superintendent; (2) department superintendents; (3) plant engineer; (4) research department head; (5) chemical laboratory head; (6) testing department head; and (7) head of personnel department. If cost features are taken up at each meeting the office manager or person in charge of the financial section should also attend. From time to time other persons may be called in as the occasion requires.

Definite Agenda

The meetings should follow some definite agenda, to save time, with the inclusion of any special items that may develop. The general superintendent, as chairman, should always endeavor to elicit a free exchange of ideas and opinions from the members of the group. It is often amazing to note the variety of thoughts that come out.

Of course, differences of opinion among the members regarding a certain subject will develop. When the different shades of thought seem logical, even though quite diverse, experiments can be conducted to ascertain which will augment the efficiency of operation or improve the product.

The open, frank, discussions serve to dispel those little personal antagonisms that are bound to occur in the most perfectly co-ordinated group of production department executives. A plan that has worked well in developing co-operation is to have the men in the group arranged in committees of two or three members to investigate such matters as suggestions, experiments, research items, accident prevention and so on. The chairman of each such division can report at the weekly meeting and thus keep all the members informed of the progress of the several matters under review.

One of the trickiest factors in an up-to-date mill is the handling of suggestions. Generally, all plants have some system whereby employees may write their suggestions on a form which is then placed in a locked box. Unfortunate results often happen, when plants of the same organization located in different parts of the country have different scales for awarding employees for their suggestions. Workers usually have a way of finding out how the suggestions are rewarded even though the plants may be miles apart. One plant, in fact, belonging to a group of mills, scattered through several states, got to the point where there were no suggestions turned in by the workers. Even the men in the different strata of the operating executive staff chafed under what they thought was the unfair awards for suggestions in their particular plant. A unified system of awarding makes for harmony.

Rotate Committeemen

The committee on prevention of accidents should be rotated at regular intervals. There should be no concealing of anything that may cause an accident. While it may be hard at first for the committee to report frankly what it finds, the general superintendent should insist that the whole truth of the findings be brought to light. In due

time all the various members will partake most sincerely in their appraisal of the accident hazards in the departments of their fellow executives.

Plans that have been inaugurated in any department to eliminate accidents and are found to be of benefit should be mentioned and praise given to that particular department. Sometimes other departments can use the same idea to good advantage and thus an advance in accident prevention may be furthered throughout the plant. One of the places where co-operation will show gratifying returns is that of the exposure of faulty work in the product. The general superintendent should inaugurate a system whereby each department will pick out the faulty material it receives from the previous departments. Such a system will automatically spur each department to do its level best to prevent any faulty work from getting into the following departments.

Impetus to this method of reducing defective product is the plan of forwarding each day, by each department, the faulty material from the previous department. The head of each department receiving the faults should have the section-hands take the material to each worker and stress the importance of reducing such faulty items. It will be found that this daily showing of faulty product will activate the workers into bringing up more alertly to the fixers any condition around the machinery that may be turning out bad material. Section hands and fixers also increase their efforts to rectify the fault-making conditions.

Faulty Product Prevention

A monthly meeting, at some central point, of all the foremen, supervisors and other members of the executive staff, just to view the faulty product and to discuss measures for its prevention is often a most effective way to bring a decrease in the undesirable work. Charts comparing present faults with those of the past few months will automatically disclose whether the faults are diminishing or increasing. Some particularly numerous type of fault should be singled out for a concentrated effort to force it to a lower level.

When costs are considered—and it is often good to do this at each weekly, or at the most, monthly meeting of the top executives—it is advantageous to have a chart prepared prior to the meeting. This chart should give all the details necessary to pinpoint whether costs are increasing, decreasing or remaining stationary. If costs are shown departmental-wise, each department head should be called on to explain the reason for any change. On the other hand, if the cost in any one department shows a marked decrease, the superintendent of that department should tell how the decrease was brought about. Other departments might perhaps be in a position to use the same methods to bring their costs down.

Now, while this discussion is concerned primarily with the production departments, there are certain so-called non-productive departments, the heads of whom are often in a position to contribute ideas which will be of benefit to the plant's product. These are the persons in charge of maintenance, research, dye and bleach laboratory, physical testing department, etc.

The maintenance head, whether called master mechanic or plant engineer, is well aware of what machines require the most in terms of men and time to keep in proper working conditions and he can often suggest means whereby

the mill can reduce the cost of repairs and replacements, and the downtime of the machines.

The research man, naturally, is in touch with all the progressive ideas in connection with increased efficiency of machinery and accessories, and with the efforts to make every possible use of automation throughout every department in the plant. The person in charge of the chemical laboratory is often the means of keeping the plant going when the dyeing and bleaching supplies are tied up by outside strikes or similar reasons. The head of the physical testing department is, or should be, the watchdog of the quality of the product. His department can be the easily accessible depository of the various test results in connection with the quality of the product, whether for strength, yarn sizings, yards per pound and so on.

Performing Experiments

A further point in the matter of co-operation is the proper carrying out of experiments. Special tests may be conducted to determine whether a cheaper grade of cotton processed a certain way will give the same strength as the present grade, or whether a certain change in the ingredient in a dyeing formula give a more brilliant cast to a certain color of dye. Care should be the key word in every department through which the material may pass.

The evaluation of the results of these special tests or experiments should never be left to the decision of a single individual. A comparison by several persons is a better way of accurately evaluating the result of the test. For example, if improved luster is the result sought, the head of the dyehouse, the heads of the chemical and physical laboratories should be among the group who will assist in the judging. A person from the office personnel should make up a list of the names of the evaluators and should note their remarks and choices. The regular material in each of the colors or shades checked should be used in the comparison of the test material.

Enough has been said of the way in which co-operation may be attained, because the methods mentioned have been successfully used in some large mills. By no means should it be considered that they are the only means for obtaining co-operation. However, by using them as a basis for operations, other means that come to the minds of an alert co-ordinated group of executives will help to carry the plant by means of fullest co-operation to a greater degree of efficiency—increased production, better quality, lower cost.

Senator Russell To Speak To A.C.M.I.

U. S. Senator Richard B. Russell of Georgia will be the principal speaker at the annual meeting of the American Cotton Manufacturers Institute at Hollywood, Fla., April 12. Announcement of the senator's acceptance of the invitation from the group, was made by L. G. Hardman Jr., president of A.C.M.I. and president of Harmony Grove Mills, Commerce, Ga.

Mr. Hardman, a personal friend of the veteran lawmaker, said the senator's speech would climax the three-day convention of textile manufacturers. In addition to being a member of the newly created Senate Astronautics and Space Exploration Committee, Senator Russell is chairman of the Senate Armed Services Committee and a member of the Appropriations Committee.

A Cotton Empire Shifts

KING TEXTILE AND KING COTTON

"KING Cotton is abdicating! Long live King Textile!" That, let it quickly be conceded, isn't quite as sensational or spectacular as it might appear at first glance. Yet from the total viewpoint of the whole textile manufacturing industry, it has come to be true, in some measure at least, since more and more the mill industry has seemed to be arriving at the view that what is really important is the total fiber market, rather than the relative competitive position of any particular fiber.

Yet even this wasn't the point intended to be emphasized or underscored by that introductory, and rather significant, quotation. It's merely a matter of bringing to attention or into sharp focus a very marked and pronounced continuing trend. The extent of the trend is probably none too well realized other than by those who day in and day out are very closely a part of the raw cotton trade, as contrasted to those in some of the varied capacities of the related textile industry that do not very closely or directly pertain to dealing in raw cotton.

It's simply this: No matter if the song "Dixie" still says so, you can't these days appropriately or with strict accuracy call the Old South or what is sometimes known as the "Confederate South," the land of cotton. Not any more, you can't. With each passing year, such language or phraseology becomes a little more obsolescent, if indeed it is not already obsolete now beyond any recall.

Furthermore, what's equally significant or perhaps even more so, is that the farm economists can't foresee the Old South ever becoming the land of cotton again, no matter what occurs. The truth is, and it is a truth which might as well be realistically faced, the long era when cotton was such a supreme monarch, doing so much to shape the social structure and the destiny of a vast sub-continent and therefore a nation, seems definitely to be going or gone even now forever.

A Gradual Shift

The change or transition, of course, has been evolving for some years but it has gradually come to amount to perhaps the greatest agricultural shift or migration of all time. On a rather tremendous scale, cotton production has gone West, and continues to gravitate West of the Mississippi where, in general, farm operations are on a large scale, irrigation for vast areas is essential, and high capital investment, terrain and other factors make for mechanization nearly complete and universal. And where, it might be added, yields per acre are generally fabulous by comparison with those of the Old South, except for some areas of the Mississippi delta, where flat bottomlands and big-scale operations covering thousands of acres make a large capital investment and complete mechanization both feasible and highly profitable.

The long reign of "King Cotton," as the staple was so long personified, has left deep socio-economic scars upon the Old South, and there are yet also sharp socio-economic overtones in the new shift or transition, which apparently has not yet attained its ultimate magnitude or full significance.

The rather vast and tremendous area which is called the Cotton Belt still stretches, of course, from Virginia to California, embracing something over 800,000 farms in 19 states. The farm value of cotton in 1956 was about $2.5 million. And in another separate yet somewhat related segment of the broad and complex cotton industry, over a million workers are engaged in spinning, weaving and finishing cotton products, and these are situated mainly in the Southeast, and largely in the states of the Carolinas, Georgia and Alabama.

Steadily Losing Ground

Yet, on the other hand, for the last three decades or more cotton has been steadily losing ground and acreage and in the last few years the acreage actually has been only about one-third of what it was 30 years ago.

The domestic market or mill consumption has stood relatively still, the mills consuming about 9.2 million bales a year for the last decade. The output of various synthetic or man-made fibers has forged steadily ahead, doubling in the past eight years. These fibers are now equivalent to about five million bales of cotton each year.

Yet even this is not really the most spectacular part of the changed picture. Stop and consider for a moment that in the current crop year, for instance, the relatively new cotton-producing state of California alone got more cotton from its 700,000 acres than did the four old cotton states of North Carolina, South Carolina, Georgia and Tennessee on their combined acreage of about 1,900,000. And Arizona, another new growing area, made considerably more cotton on its 350,000 acres than did Georgia and South Carolina on their combined 1,000,000 cotton acres.

From about the beginning of the 19th century, when the invention of the gin started Dixie on commercial scale cotton production, on through the 1920's, the Carolinas, Georgia and Alabama made up an almost solid cotton field. In 1930, for instance, these four states planted 26 per cent of the total cotton acreage and produced around five million bales annually or roughly 36 per cent of the total U. S. production. What's the relative status now? In the current crop year, Alabama produced around 700,000 bales. Georgia, South Carolina, Louisiana and Tennessee each made about a half million bales, and North Carolina about a third of a million. The total production in northern Florida was only 1,300 bales.

Texas, of course, with its vast area, leads in production with about three and a half million bales. Mississippi and California, each with a production of about 1.5 million

bales, tend to run more or less neck-and-neck for second place in late years. Arkansas is fourth with about 1.4 million bales. These four states together produce over half the U. S. crop.

What's caused this dramatic and spectacular shift or change other than irrigation, mechanization and high yields in the West and Far West? There are, the agricultural economists point out, several important factors. For one thing, except in parts of the Mississippi delta, the farms in the old cotton belt are relatively small. Since the early 1930's, price supports and acreage controls or sharp cutbacks—a program costing the government billions of dollars—has tended, as a consequence of various developments, to aid primarily the large-scale growers in the newer producing areas. The small-scale farmer in the Southeast has pretty much been driven out of the cotton business, and farm economists are fairly well agreed that there isn't any cotton program, or even the absence of any program at all, which can help him.

It's worth noting that, significantly, something of the same thing which has been happening to the U. S. Cotton Belt has also been happening to some extent throughout the world. There has been a rather substantial trend toward increased cotton production in irrigated areas everywhere, even abroad, since the weather in such areas is generally favorable for the production of high grade cotton. However, there is still a significant proportion of the world cotton crop produced under rain-grown conditions, as is the cotton in the older producing areas of the United States. It has been mainly in the rain-grown areas of the U. S. belt this season where unfavorable weather has precluded the production of cotton qualities most desperately needed by the domestic textile mills.

To digress for just a moment, the present cotton season is rather paradoxical, since it is marked by a real scarcity of needed grades when the actual total supply of all cotton is somewhat excessive. The severe or acute scarcity is in high grade $1\frac{1}{32}$-inch to $1\frac{1}{8}$-inch cotton and more of this kind of cotton than is in existence in the world this season will be needed to satisfy mill requirements. And actually the supply situation may be sufficiently short as to require a shift to rayon in order to meet consumer demand until another cotton crop is harvested.

The consumption of cotton in the free world has been rising during the past few years and so has cotton production. Worth noting is that the trend in consumption has been more and more to the use of the higher grades. And, to be utterly realistic, it might as well be admitted that, on the whole, neither in the United States nor elsewhere can cotton growers always produce the grades of cotton needed by textile mills. Hence, the need always for adequate reserve stocks of good grades of cotton.

As for other aspects of the world cotton situation having a bearing, direct or indirect, on the revolutionary shift of cotton production geographically in the United States, there is the fact that since the 1949 season, the last year prior to the re-introduction of U. S. acreage controls in the post-war period, total cotton production in the free world has increased relatively little. However, during this same period foreign cotton production has increased nearly six million bales or by nearly 60 per cent.

JUDSON ON DISPLAY—Judson Mills of Greenville, S. C., recently displayed a variety of its products in the South Carolina Bank in Greenville. The bank regularly allocates space for promotion of Greenville industries and their products.

U. S. Control Programs

And, of course, it does not take any master minding to recognize that the difference lies in the reduced production in the United States where, under control programs, production has been reduced from 16 million bales to 11 million bales this season. Yet the fact remains that while cotton production has been reduced by nearly five million bales in the United States since the 1949 season, the total U. S. carryover stocks of cotton have increased. In fact they have more than doubled. At the beginning of this year stocks amounted to about 11 million bales. The acute situation facing the mill industry, as noted before, is a severe shortage of *quality* cotton, certainly almost unprecedented in modern time.

Cotton stocks, it might be noted on the other hand, have not increased importantly abroad. At the beginning of this season stocks of free world foreign grown cotton had increased but were still only about a million bales larger than they were in 1949. The greatest increase in cotton production has occurred here in North America and in Asia. Some of the nations that have increased cotton production the most percentagewise are Mexico, Nicaragua, San Salvador, India, Pakistan, Syria, Turkey and Iran.

Actually, for the first time in history, cotton production has expanded significantly in Europe and this is especially true in Greece and Spain. Here cotton production has risen from less than 100,000 bales before the war to about one-half million bales this season. Relatively little increase in cotton production has occurred or is occurring in South America and in Africa with the exception of comparatively unimpressive increases in Africa of Sudan, Tanganyika, Nigeria and Mozambique.

Russia And Red China

Outside of the free world, of course, cotton production is also reported to have increased. This is particularly true in respect to Russia and China. Since 1949 cotton production in Russia is reported to have expanded by two million bales or by about 50 per cent. During the same period the production of cotton in China has increased nearly $1\frac{1}{2}$ million bales or has almost doubled.

All these, of course, are factors having some bearing, direct or indirect or remote, on the peculiar situation of the raw cotton industry in the United States, the spectacular shift westward of the domestic cotton belt and the catastrophic shortage of required grades faced by American mills.

The whole complex situation is all the more of a paradox for the reason that cotton has recently closed what has actually been its best year in the free world outside the United States. It becomes all the more a seemingly contradictory situation when it is considered that production, consumption and the international movement of the commodity were at a record level during the year.

The year-end indications seemed to be that the upward trend in world consumption would continue, but at a lower rate. And at the same time, aggregate free world international shipments were lagging a bit, but this had been expected because of the high level achieved in 1957. Nevertheless, excluding the United States, cotton production in the free world for this season, which started on August 1, may be at a record. Preliminary estimates have indicated it was 16,400,000 bales, or 500,000 more than last season.

Cotton Consumption Abroad

There has been a steady expansion of cotton consumption abroad in the period after the Korean war. The consumption last season by the free world other than the United States aggregated 20,900,000 bales, a gain of 1,700,000 over the 1955-56 season. This compared with the five-year period ended August 1, 1939, of a yearly average of 15,700,000 bales.

The largest gains in consumption have been reported by countries that were of relative minor importance in the cotton textile industry before World War II. The consumption of these countries last season amounted to 6,000,000 bales, a rise of 400,000 over the preceding season and almost four times more than the 1,800,000 bales used yearly in the five years before the war.

The international trade in cotton last season among the free world countries amounted to 14,200,000 bales, the highest for the post-war period. This significant upsurge, of course, was accounted for by the increase in United States exports, which amounted to 7,600,000 bales, or more than three times the foreign sales of 2,200,000 in the previous season. Aggregate exports by the other free world countries were only 6,600,000 bales or 2,700,000 below the 9,300,000 in the preceding season. The U. S. exports, naturally, were influenced by the government's various financing programs and such foreign sales were placed at 3,600,000 bales, or nearly one-half the total movement.

Paradoxical Factors

It is certainly a somewhat significant fact, too, that, according to recent government figures, the percentage of cotton used by the U. S. textile industry showed an increase in 1956 for the first time in five years. The change or relative shift was nothing spectacular, of course, but cotton accounted for 67.1 per cent, or slightly over two-thirds of all fibers, in 1956, an increase of two-fifths of one per cent over 1955. As late as 1942, cotton represented over 80 per cent of all fibers used by mills of the country. The use of wool also increased slightly, a little over one-half of one per cent to 6.8 per cent. Rayon and acetate dropped nearly three per cent to 18.4 per cent, but other man-made fibers increased nearly one per cent, to 7.4 per cent. The average use by each person of products made from all fibers during 1956 was 38.7 pounds, a drop of about one and a half pounds, and therein perhaps lies really the most important fact of all.

So really there are many factors, some rather complex and seemingly paradoxical, as well as innumerable ramifications, which enter into the peculiar situation in which the U. S. cotton industry finds itself today and which in one way or another has tended and is tending to reduce the relative importance of the older part of the American Cotton Belt and encourage the spectacular rise of the newer production areas in the West and Far West. Certainly to the larger or more important degree, however, the main causative factors might be described as internal rather than external.

Removal Of Price And Acreage Controls

The thing which is really of economic significance to the cotton empire is simply this: However soon desirable changes are evolved in the U. S. government's cotton policy, the farm and cotton economists tend pretty much to agree that by the lifting of price and acreage controls or even the adoption at least of a one-pricing system for American cotton, the entire cotton industry would certainly stand to benefit, and such a change would be only a matter of fairness to the domestic mill industry, yet there is scarcely anything in the books which might alter or reverse the trends which are inexorably producing the changed geographical character or make-up of the great American Cotton Belt.

Why is this true? For one thing, the experts in agricultural economy point out, in the absence of artificial price supports and rather constant acreage cutbacks, the newer producing states with their big-scale of operation and fabulous yields would in short order drive prices down to the point where only in a few areas of the old Cotton Belt could the natural fiber be produced profitably. Another thing is that there simply isn't the available hand labor in the Old South. Recent years have seen a tremendous exodus of the farm labor force.

Migratory Labor

Some of the best available estimates are that since 1940 about five million farm workers, tenants and sharecroppers in the Southeast have left the cotton farms, mainly in the states of the Carolinas, Georgia and Alabama, but elsewhere too, in considerable number, to seek jobs in industry, either near home or afar. Most or about four-fifths of them, it is estimated, have migrated to the congested industrial areas of the East and Midwest. And in the Old South, of course, there isn't any migratory Mexican labor force such as is to be found in the Southwest and the West.

Another factor inimical to any reversal of the present trend, it must be realistically considered, is that the Old South for years, and at some periods rather dramatically, has been turning to a much more diversified farm economy, the over-all trend having been largely one toward livestock, poultry, corn, feed and various other highly specialized food crops.

So there's really more economic sense and truth than there is sentimentality or poetry if a large part of the Old South, or a large part of the once predominantly cotton-growing South, apparently moves toward a realistic view that it's really now a matter of: "King Cotton is moving on! Long live King Textile!"

Reporting On The 1958

COTTON RESEARCH CLINIC

The National Cotton Council of America last month conducted its annual Cotton Research Clinic at the Carolina Hotel in Pinehurst, N. C. Warmly applauded by all who attended it, and hailed by some as the finest yet held, the clinic presented an array of speakers dealing with a host of interesting subjects.

Staff Prepared

THE 1958 Cotton Research Clinic was held at the Carolina Hotel, Pinehurst, N. C., February 12-14. The clinic, which is sponsored every year by the National Cotton Council of America, was under the general chairmanship of Halbert M. Jones, president, Waverly Mills Inc., Laurinburg, N. C. It consisted of five technical sessions and a dinner meeting.

Opening Session

The paper entitled "A Study of Cotton Combing" was delivered at the first technical session by Carl D. Brandt, Whitin Machine Works. Combing was termed "the nicest and most intricate operation in the manufacture of yarn" by Mr. Brandt. In explaining the action of the comber he said, "the actual operation of combing consists of a series of intermittent motions: first, the feeding and gripping of the sheet or lap of cotton; second, the combing of the fringe by the needles of the half-lap on the cylinder; and finally, the joining of the fringe with the previously combed fibers and the detaching or removal of the combed fibers from the fringe."

In discussing the effect of the lap weight upon the amount of noil removed, Mr. Brandt said that "over a period of time there has been a rather steady increase in the weight of laps prepared for combing until today a weight of three or four times that of the early years is quite common." Because higher production depends on the use of a heavier lap and a heavier lap means reduced draft, and fiber parallelization, somewhere along the line, he said, "it is much more difficult to comb a heavy lap than one of lesser weight."

Pointing out that combing is no longer a slow and expensive process limited more or less to the production of the finer costly yarns Mr. Brandt suggested that, "it would be well for many mills to explore the possibility of in-

Chairmen at the ninth annual Cotton Research Clinic held recently in Pinehurst, N. C., were *(left to right)* Nelson F. Getchell, National Cotton Council; Bertrand W. Hayward, president, Philadelphia Textile Institute; Halbert M. Jones, president, Waverly Mills and first vice-president, American Cotton Manufacturing Institute who was general chairman of the clinic; and Harry Defore, Deering Milliken Service Corp. The other session chairman not pictured was Horace Pennington, assistant to general manager, and vice-president, Cone Mills Corp.

cluding combing as a part of the spinning process." He said that a careful evaluation of all the advantages gained through combing might yield most interesting results.

Combing Efficiency

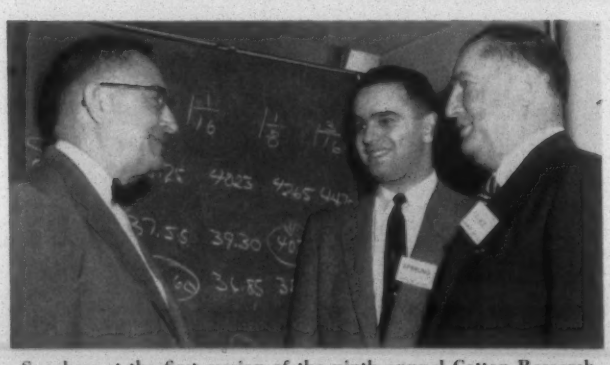
P. E. Sperling, Coats & Clark Inc., Newark, N. J., spoke on "A Study of the Effect of Half-Lap Needling on Combing Efficiency" at the first technical session. "The function of the half-lap needle segment is two-fold," he said. "It should remove all fibers shorter than pre-determined length and also remove particles of trash and nep." To what degree this is done is dictated by the desired quality of the end product. Mr. Sperling said that the theory of half-lap needling is based on progressive increases in the severity of the combing action from the time the needles of the first bar enter the beard until the last row of needles leaves the beard.

He said that the first rows of needles do relatively little combing. Their function is to catch the beard, do some straightening of fibers, and possibly remove large particles of trash. Succeeding bars, with more closely spaced needles do a more complete combing job. The spacing of the needles on the bars determines the severity of the combing action. Mr. Sperling said that "to be in agreement with the theory, the spacing between needles should decrease progressively from the first needle bar to the last needle bar." An investigation revealed that the needle spacing of half laps was not correct in that it did not get consecutively finer from row to row. This fault would eliminate individual rows of needles from having maximum effect on the combing action.

Mr. Sperling said that "several preliminary tests have been conducted over the past 1½ years in two of our mills having Nasmith combers on the effect of a change in half-lap needling specifications.". The results of these tests have indicated that there are potential savings in waste to be obtained by changing needle specifications. If a mill is satisfied with its present quality level, all the savings can be taken in the form of waste reduction, he said.

Second Session

Nelson F. Getchell, National Cotton Council, was chairman of the second technical session during which a paper entitled "Evaluation of Yarn Quality" was delivered by James M. Heavener, Botany Cottons, Gastonia, N. C. Mr. Heavener said that the purpose of his paper was to emphasize "that quality must be broken down into its component parts and interpreted so that management could direct its efforts where needed." In order to provide management with informative guidance, he said, "we broke the quality requirements down into three basic factors: (1) size variation; (2) short term variation; and (3) imperfections in yarn."



Speakers at the first session of the ninth annual Cotton Research Clinic included *(left to right)* Carl D. Brandt, Whitin Machine Works, Whitinsville, Mass.; P. E. Sperling, Coats & Clark, Newark, N. J.; and D. Hunter Cauble, A. M. Smyre Mfg. Co., Gastonia, N. C.

Mr. Heavener presented charts comparing two yarns of different quality levels. The comparison was based on standard count, actual count, actual break, break factor, variation in size, short term variation and imperfections per 1,000 yards both visually and electronically. He said that "knowing the quality level does not improve it. Action on the part of management and line supervision is essential." He said that it was immaterial to nurse an individual machine to top performance. "The important factor is that the over-all quality level is improved," he added.

"Long term variation is a question of proper blending, low picker lap variation, effective doublings, machinery standardization and controlled operating methods," he said. The prevention of slubs, gouts and piecings is accountable to poor operating habits. Neps and small imperfections "depend chiefly on proper air and speed regulations of our opening and picking equipment, carding and combing rates, settings and maintenance," he said. Mr. Heavener closed his talk saying, "We must be more than a data gathering center. We must guide management into effective action by separating quality into its components."

Roll Run-Out

Lawrence O. Bragg, Institute of Textile Technology, Charlottesville, Va., reported on a long series of investigations on roll run-out in a paper entitled, "The Effect of Spinning Roll Run-Out on Yarn Quality and Processability." Results of this study indicate that an analysis of the ranking of the fabrics showed that graders could not detect increasing roll run-outs in the warp direction of broadcloth (110x58). A possible explanation for this fact is that the relatively tight construction made the unevenness of the yarn less noticeable. Mr. Bragg said, "roll run-out in the filling of 80x80 print cloth was noticeable to the fabric grader." Although there was some disagreement among the graders at run-outs from 0.000″ to 0.005″, all graders selected the fabric with 0.0065″ run-out in the filling yarn as the worst fabric in the group.

Conclusions of the study were cited by Mr. Bragg as being: (1) square neck jointed rolls have higher run-outs than screw neck jointed rolls; (2) only a relatively small percentage of the stands tested had excessively high roll run-outs; (3) the quality of 31/1 warp yarn appreciably deteriorates at a bottom front roll run-out in excess of 0.0055″; (4) as the bottom front roll run-out increases, more rejects in spooling and more warp stops in weaving occur; and (5) the appearance of filling in 80x80 print cloth decreases with an increase in bottom front roll run-out but this was not found to be true with the warp yarns in 110x58 broadcloth.

Nepotometer

A feature of the second technical session was a discussion concerning the use and application the Nepotometer. Some

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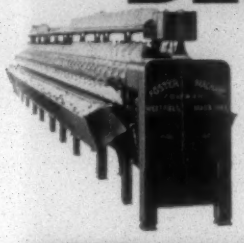

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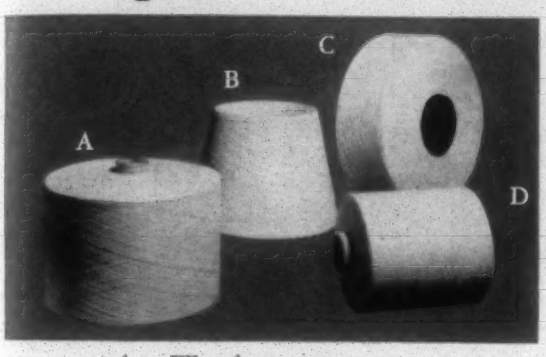
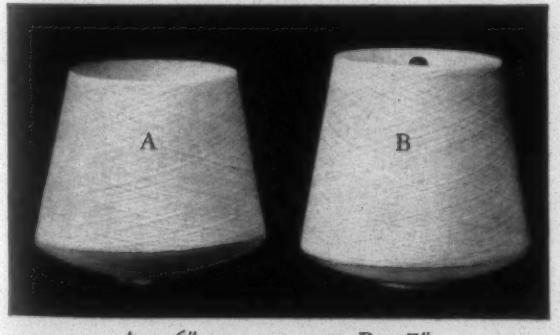
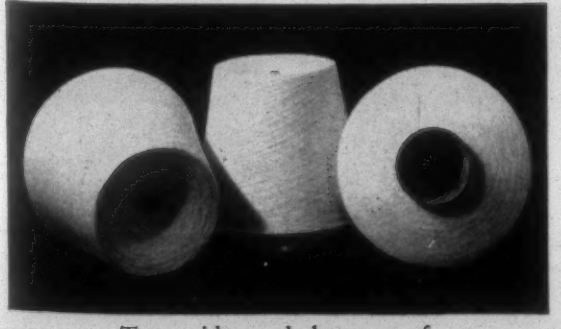


A — Warping cone
B — Knitting cone
C — Short traverse cheese
D — Dye package



A — 6" traverse cone. B — 7" traverse cone holding 10% more yarn.



Top, side and bottom of Model 102 knitting cone, showing convex base, perfect shape and uniform wind.

801-7

Flexibility — Will handle any count (except coarsest) or type of spun yarn — soft twist as well as hard twist • Any angle of wind from 9° to 18° • Any taper commonly used • Knitting cones, warping cones, dye packages, or short traverse cheeses (when machine is properly equipped) • Conditioned yarn as well as dry yarn — even dye packages which are damp in the middle • Density of packages easily regulated.

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factors which affect the findings of the nepping potential testing device were reported by Ruby K. Worner, Southern Regional Research Laboratory, U.S.D.A., New Orleans, La. She concluded that "it has been shown that in the Nepotometer test, a standard-weight specimen does not necessarily produce a standard-weight web and there may be considerable differences in this respect among different cottons." Statistical analysis of simple tests such as micronaire or upper half mean length will account for about 70 per cent of the variance in the log of the neps per grain. "The special need for an instrument such as the Nepotometer is for detecting those cottons with anomalous behavior that might prove troublesome in processing," she said.

A progress report on the Nepotometer's "Use As A Mill Instrument" was presented by Leon D. Pryor and John P. Elting, The Kendall Co., Research Laboratories, Paw Creek, N. C. This report consisted of two parts. Part one gave results of three mill experiments in which the Nepotometer grade of the cotton used was controlled. Since changes in neps, imperfections and yarn appearance correspond with changes in the Nepotometer grade of the raw cotton it was concluded "that the Nepotometer does predict the tendency of cottons to form neps during processing."

The second part of the report presented a comparison of the nepping potential of raw cotton, expressed as Nepotometer grade, with the conventional measurements for fineness and maturity. "It is found that when attention is restricted to American Upland cottons of $1\frac{1}{32}$ to $1\frac{1}{16}$-inch staple and grades of strict low middling to middling, Nepotometer grade is a vastly superior criterion to either fineness or maturity in predicting the tendency of cottons to form neps."

Jacob V. Shepherd, U. S. Cotton Ginning Laboratory, Stoneville, Miss., outlined the Stoneville method for conducting tests with the Nepotometer in a paper called, "Means For Measuring Neps Produced By Ginning Treatments." The method described was said to be about twice as fast as the normal one because of increased mechanization of the process. He said that the Stoneville Nepotometer test is a valuable measure for screening tests on lint cotton lots in ginning projects. "In this manner it is determined which lots should be subjected to spinning tests. As a result, considerable time and money are saved in our fiber and spinning test program," he said.

Progress reports on the use and application of the nepotometer were delivered at this year's Cotton Research Clinic by *(front row, left to right)* Jacob V. Shepherd, U.S.D.A. Ginning Laboratory, Stoneville, Miss.; Ruby K. Worner, Southern Regional Research Laboratory, New Orleans; Leon D. Pryor, Kendall Mills Co., Paw Creek, N. C.; and R. Hobart Souther, Cone Mills Corp., Greensboro, N. C. Also speaking at the same session were *(back row, left to right)* James M. Heavner, Botany Cottons, Gastonia, N. C., and Lawrence O. Bragg, Institute of Textile Technology, Charlottesville, Va.

Fiber Quality

The chairman for the third technical session was Harry Defore, Deering, Milliken Service Corp., Union, S. C. "Manufacturing Performance and the Evaluation of Fiber Quality," was the title of the first of four papers presented at the session. Burt Johnson of the Cotton Research Council delivered the paper and said that its title encompassed "three very important and urgent research and commercial needs in cotton: (1) research on manufacturing performance of lint; (2) research on methods for evaluating fiber quality; and (3) research to establish accurately the relationships between fiber quality and manufacturing performance."

Mr. Johnson said the need for better fiber testing methods has become urgent because of: (1) the demonstrated value of laboratory and commercial fiber tests in the control of yarn quality; (2) more and more proof that there are definite, important but subtle relationships between fiber properties and manufacturing performance; and (3) simultaneous revolutions in cotton breeding, growing, harvesting, ginning and spinning are proceeding at break-neck pace. These revolutions have made all the old criteria of fiber quality and of acceptable manufacturing performance obsolete.

The effects of ginning methods on fiber quality and manufacturing performance were discussed by Mr. Johnson. He said that a carefully planned ginning-spinning test of manageable size, involving one variety of cotton, one gin and one mill, is now is progress. "The co-operation of all groups, organizations and individuals who have been asked to participate in this experiment is of the highest order," he added.

The relationships between fiber quality and manufacturing performances came under discussion when the speaker pointed out that a recommendation was recently made to the cotton breeders that length is a fiber property that should receive their careful study. "All knowledge on cotton, especially that on fiber properties and spinning performance helps guide the breeder," Mr. Johnson pointed out. A specific recommendation, pointing out the importance of fiber length, has been formulated and transmitted to the breeders. It has been suggested that they institute a study to improve fiber length.

The recommendation told the breeders, in part, that production executives of mills representing well over 1,000,000 spindles were asked what had happened to spinning in their plants since World War II, Mr. Johnson said. The survey showed that: (1) each mill had modernized its machinery, processing organization, maintenance program and atmospheric control; (2) each mill increased spindle and front roll speeds and package sizes; (3) each mill increased spindle load 50 to 300 per cent by mechanized cleaning methods; (4) each mill is working closer and closer to the spinning limits of its cotton; (5) ends down are no greater than they were at the end of the war; and (6) to the question, "Of all fiber properties, which is in most need of improvement?" each mill man answered without hesitation, "length."

L. Rebenfeld, Textile Research Institute, Princeton, N. J.

delivered a paper called "Transmission of Cotton Fiber Strength And Extensibility," at the third technical session. In the paper the breaking tenacities and breaking elongations of six experimental cottons were compared in several textile structures. These structures included single fibers, fiber Pressley bundles, yarns and fabrics in two constructions.

The paper showed that the breaking tenacity of single fibers is not fully transmitted to more complex textile structures. The degree of transmission of single fiber strength is not constant for the six cottons but is dependent upon the breaking tenacity of the single fibers. Mr. Rebenfeld concluded "that while the differences among the experimental cottons in fiber strength and extensibility are clearly evident in the textile structure properties, these differences tend to be leveled out by the textile manufacturing operations."

In a paper called, "A Rapid Method for Obtaining Length Characteristics of Lint Cotton," John T. Rouse, U.S.D.A., summarized the advantage of the dial Fibrograph method. In the method two dial gauges are mounted on the Fibrograph to obtain length results instead of using the Fibrogram drawn by the instrument. One of these gauges is mounted to measure the movement of the comb carrier and the other is mounted to measure the movement of the card carrier.

Mean Length Variability

"The variability of the mean length is only one-half as large as it is for the regular Fibrograph method," Mr. Rouse said. This provides more accurate uniformity ratio results. Another of the advantages of the dial method was cited as being that "the general level of length and length uniformity results are approximately the same as for the regular Fibrograph." There is a good correlation between both the length and the length distribution results and similar results for the array method. The correlation of the results with spinning test data is much higher than for the regular method. Mr. Rouse said that the Agricultural Department felt that this dial method is "a practical one which provides a better combination of speed of testing and accuracy of results than do other available methods."

"A Pneumatic Method of Measuring Cotton Fiber Staple Length" was the title of a paper delivered by Hugh M. Brown, research consultant, Clemson, S. C. He explained that the mean and upper-half mean fiber length can be measured by drawing air through a cotton fiber beard, formed with two combs, placed over a narrow slit to form the fourth arm of a pneumatic Wheatstone bridge. The unbalanced deflection of the "pneumatic galvanometer" across the bridge varies correctly with the number of fibers over it to enable measurement of the mean value from curves automatically drawn by the device. Mr. Brown presented data gathered in testing 17 cottons and compared the results of this method with those obtained with the Fibrograph.

Closing Technical Session

The fifth and final technical session of the research clinic was under the chairmanship of Horace Pennington, Cone Mills Corp., Greensboro, N. C. The first speaker of the session was Henry K. C. Woo, North Carolina State College, Raleigh, who delivered a paper called, "Predicting

Ends-Down From Small Lot Spinning Tests." The paper showed methods of translating the end-breakage values for a limited number of spindles to those expected for a larger number. Mr. Woo used the Poisson frequency function to translate the end-breakage rate of 35 and 75 per 1,000 spindles per hour into a series of critical values which would be used to judge spinning performance in small lot tests for various numbers of spindles used. The critical values for various numbers of spindles used were determined graphically from the cumulative frequency of Poisson distribution. Rapid evaluation of spinning performance is permitted by the construction of graphs representing these critical values.

Optical Trash Measurement

Cameron A. Baker, United States Testing Co., Hoboken, N. J., delivered a paper entitled, "An Optical Measurement of the Trash Content of Ginned Cotton," which was prepared by himself, George Kirk and Harry Gaffney. He reviewed current methods of evaluating the amount and particle size of trash in ginned cotton and evidenced the need for simplicity and speed in obtaining a measurement of trash content. He discussed a new optical-electronic method of scanning a classer's sample to record both particle size and number of particles. "The sum of the areas in the sample which are darker than the background are taken as a per cent of the total area scanned," he said. "The method utilizes a closed circuit television camera which, in a fraction of a second traverses the face of the sample and reads out the desired information directly." Results of tests designed to prove the reliability and validity of the method were given as was a comparison to current methods of evaluation.

Walter E. Chapman Jr., U. S. Ginning Laboratory, Mesilla Park, N. M., was the third speaker of the final technical session. The title of his paper was, "Predicting Cotton Fiber Maturity With The Micronaire." He cited the need for developing a fast, economical and reasonably accurate method to predict cotton fiber maturity. He said the principle employed to do this "was that of increasing the volume of the standard 50-grain sample over that employed in the regular micronaire tests for fineness." With the one-inch inside diameter cylinder, the experimental increase was 0.3927 cubic inches for a ½-inch lift of the plunger. A ½-inch spacer was devised to insert between the top surface of the cylinder wall and the lower surface of the flange on the plunger.

Speakers at the third technical session of the Cotton Research Clinic were *(left to right)* Hugh M. Brown, research consultant, Clemson, S. C.; Joseph T. Rouse, U. S. Department of Agriculture, Washington, D. C.; Ludwig Rebenfeld, Textile Research Institute, Princeton, N. J.; and Burt Johnson, National Cotton Council.

"Readings on the micronaire upland cotton curvilinear scale with the spacer were consistently higher than readings without the spacer. The differences between the readings were found to be greater for mature cottons than for immature cottons," he said. Some 57 samples were selected for testing. Their Causticaire maturity indexes ranged from 40 to 82. These samples were from both early and late harvests and included several irrigated Southwestern known varieties, several unknown varieties and some badly damaged samples from a pink bollworm research project.

Differences Plotted

"When the differences between the readings with and without the spacer were plotted against the Causticaire maturity indexes, the correlation coefficient was found to be plus 0.90 with a straight line regression," Mr. Chapman said. Subsequent tests with extra long staple American-Egyptian cottons indicated similar trends to upland cotton in respect to predicting maturity. He said that for cottons which are coarser than most Southwestern varieties different spacers were necessary. Spacers of ½, ¼ and ⅜-inch were tried on different tests in order to keep the readings within the range of the scale. For the ⅜-inch spacer the correlation coefficient was found to be plus 0.92.

Mr. Chapman concluded: "A direct reading scale for predicted maturity could be mounted on one side of the glass column on the micronaire and this scale would be read when the spacer is used. Therefore, we are attempting to provide a method to predict both maturity and fineness almost as quickly as fineness alone is now predicted."

In a paper presented by A. L. Miller, S.R.R.L., New Orleans, La., the subject of "An Investigation of Air Pressures in the Cotton Carding Machine" was considered. He said that although there had been much discussion of the function of air in the operation of the standard cotton carding machine and that many theories have been advanced, opinions expressed and mathematical deductions made, there was still a question as to whether air is a help or a hindrance to carding.

Carding Theory

It has been hypothesized that the tufts on the cylinder are carried into the flats and, within the distance of the first few flats, are opened and spread out among the wires of the cylinder and flats. The process then consists of individual fibers and small groups of fibers being pulled from the wires of one surface by the wires of the other surface. According to the hypothesis, they are ultimately transported by the main cylinder to the doffer. Because of the rake of the cylinder clothing, only the individualized fibers should be removed from between the wires. The essential point is that the carding action is dependent on the fibers in the wires of one surface being contacted by the wires of the other surface.

After conducting air measurements and physical experiments on the card it was concluded that air is not a major factor contributing to carding and that there is no fundamental reason requiring the use of flats for carding. Mr. Miller said that the only necessary requirement is that the

tufts and unopened groups of fibers deposited on the cylinder by the lickerin encounter a resistant force sufficient to separate them into individual fibers. These fibers are spread over the entire area of the cylinder clothing before reaching the doffer.

Flatless Carding

These conclusions were put into practical application in the development of a flatless card. Ralph A. Rusca, S.R.R.L., reported on this new machine in the final paper of the clinic, "Carding Without Flats." Mr. Rusca said the development is a simple, fixed mechanism that replaces the flat assembly and flexible bends on conventional flat top cotton cards. It weighs less than 200 pounds. The apparatus completely seals the top of the card thereby eliminating a major source of dust and fly. It has no moving parts. However, associated with it is one small moving component installed in connection with the lickerin. He said that after removal of the flats, the apparatus could be installed by two men in about four hours. The experimental device costs $1,000 and this could reasonably be expected to be halved. Operating cost is zero because it requires no power and there is no waste.

Evaluations of the apparatus under pilot plant conditions show reductions of 50 to 75 per cent in over-all card waste, about the same nep count and slightly more uniform sliver as compared with a conventional card in excellent condition. It appears to perform equally well on short, medium and extra-long staple American cottons. Carding without flats shows promise for enabling major increases in production rates. Research which is aimed at doubling production while maintaining or improving quality is continuing at the Southern Laboratory. It is anticipated that design details of the S.R.R.L. carding apparatus will be publicly available within the year.

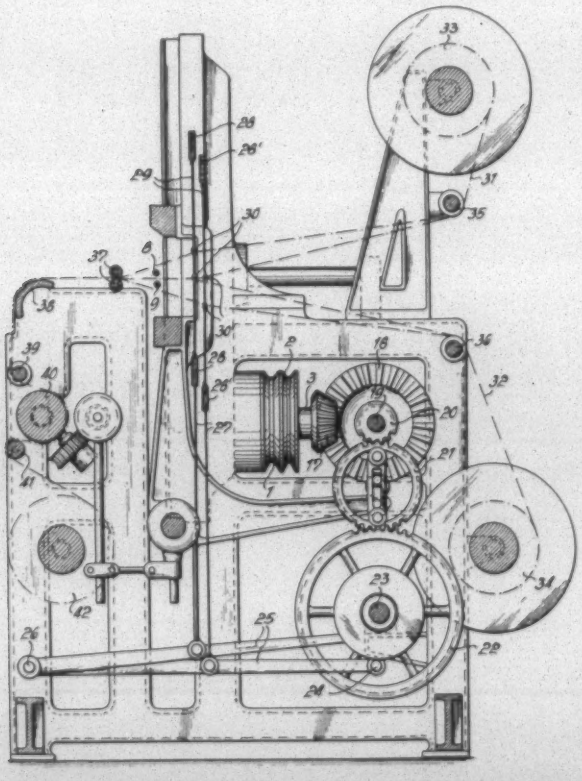
Three of the speakers who presented papers at the final session of the Cotton Research Clinic were *(left to right)* Walter E. Chapman Jr., U. S. Mesilla Park Ginning Laboratory, New Mexico; and Ralph A. Rusca and A. L. Miller, both of Southern Regional Research Laboratory, New Orleans, La.

The present annual export volume of about 500 million yards of piece goods, not including fabricated textile items, is highly important to the American industry. In terms of raw cotton it is the equivalent of about 500,000 bales. It provides employment for about 45,000 persons.

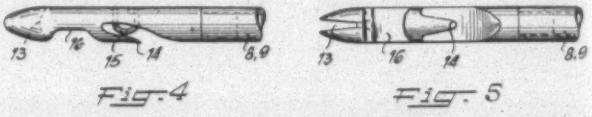
U. S. Patent Granted On German Shuttleless Loom

THIS report on a new-type shuttleless loom developed in Germany is taken from U. S. Patent No. 2,818,802 granted to Karl Haberhauer and assigned to Durkoppwerke Aktiengesellschaft, Bielefeld, Germany. It is claimed that this shuttleless loom requires much less warpwise space because the fabric is woven in folded position. Other claimed advantages include the formation of tight selvages and the ability of the loom to produce a fabric having a single filling pick.

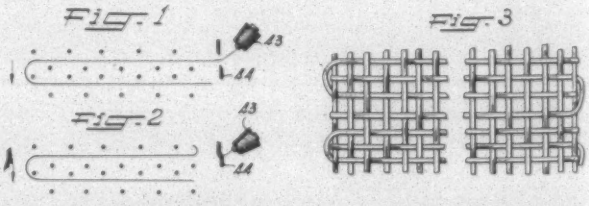
The loom forms a double shed and employs two filling-inserting needles, disposed in parallel relation, so that one needle pushes the thread through one of the sheds and the other needle pulls the thread back through the other shed. Thus the filling thread is disposed in "hairpin" shape with one leg in the upper shed and the other leg in the lower shed. With a beat-up stroke of the loom, the fabric is formed in two half-portions which are joined at one side and disposed one above the other. The thread is fed to the needles at one side of the loom and thread guiding means are provided for supplying the thread to either of the needles in selected sequence. A spreader is provided at the other side of the loom to transfer the filling thread from the pushing needle to the pulling needle.



This vertical sectional view through the loom shows the positions of the upper and lower needles (8 and 9) and their relationship to the upper and lower sheds formed by the harness frames (28 and 28′) which position the threads extending from the warp beams (33 and 34).



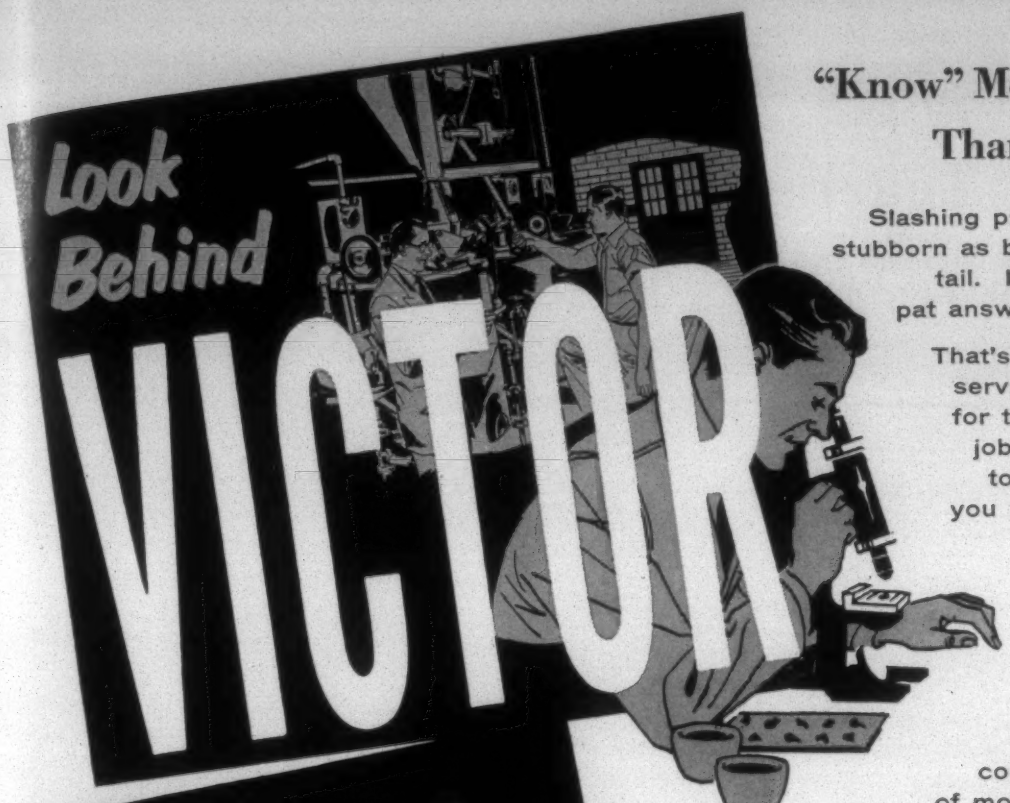
Figs. 4 and 5 are detail views of the leading end of the needles 8 and 9. The needle head is provided with an open eye (13) in which the thread is positioned when it is pushed through the shed and a hook (14) which pulls the thread back through the shed.



Figs. 1 and 2 illustrate the manner in which the filling thread is inserted in the upper and lower shed by the needles. Fig. 3 shows the selvages of the fabric after it is unfolded to illustrate the way the thread loops shroud the severed end.

During operation of the loom, one needle brings a double thread into one shed and the other needle withdraws one thread through the other shed. In the next cycle the procedure is reversed. Cutting means is disposed on the thread feeding side of the loom to cut the double thread first inserted so that the pulling needle may retract the thread into the other shed. By selecting alternate needles to first feed the thread, the filling threads are positioned in the fabric so that on the selvages an open or severed thread end is shrouded by a thread loop and remains between the loop to produce smooth selvage edges on the fabric.

The patent also points out several modified methods of operation so that two separate fabrics may be woven, one above the other, or a fabric may be woven with a double pick. This patent was issued with 21 claims. There were no references cited by the Patent Office against it.



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A Special Study

YARN TENSION

And Its Problems

PART FIVE

By JAMES R. WRIGHT, Product Engineer
Uster Corp., Charlotte, N. C.

IN TESTING the tensions found in warping and slashing there are a number of important factors: (1) speed of the slasher; (2) diameter of the beam; (3) type of beam journal bearings; (4) type of section beam brakes; (5) system of threading yarn over the beams; (6) type of squeeze rolls; (7) type of size box control; and (8) type of drive.

The tension recorded from each section should be almost a straight line if the beam is under good control. This will allow the yarn to maintain its breaking strength and maximum elongation. Various beams should have not more than two to four grams difference in tension. This close control will keep slasher soft waste very low and the weaving operation will be improved. It is important to measure the tension at every section beam. If a high or erratic tension pattern is seen on the chart, the condition should be corrected at once.

Bad Beam Bearing

Bad beam bearings show up as high tension peaks on the chart which is made by the Uster tension recorder. The yarn is, of course, being stretched at these points. When this occurs on the slasher, the size solution sets the stretch in the yarn when it is dried. This removes much of the yarn's elongation which causes more warp stops on the loom. In extreme cases the quality of the cloth may be materially affected. Other causes of stretched yarn include beams out of balance and beam barrels off center.

Yarns run on warper beams with different amounts of tension. The beam with low tension will run uneven on the slasher causing waste. This also means that the yarn on the high tension beam has some of its elongation removed. This lowers its weaving characteristics. The cost of raw stock, labor, machinery and overhead from opening through slashing makes this waste expensive indeed. Through careful tension measurement and control of slashing, this waste may be reduced and weaving quality and production improved.

Warping Tension

Irregular tension on warp threads, which occurs at times on one side or the other of a fabric, is frequently caused by improper tensioning during sizing or warping. When

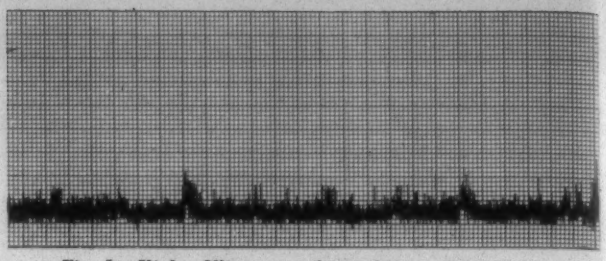


Fig. 1—Kinky filling yarn shows this tension pattern.

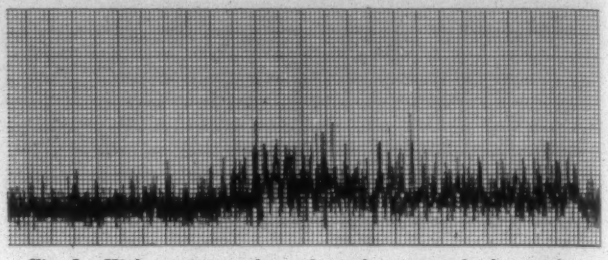


Fig. 2—High tension peaks such as these cause broken picks.

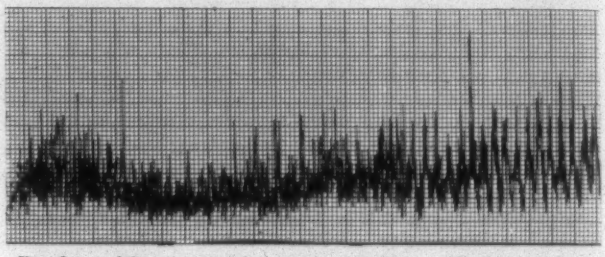


Fig. 3—A filling yarn with increasing tension as the bobbin runs empty.

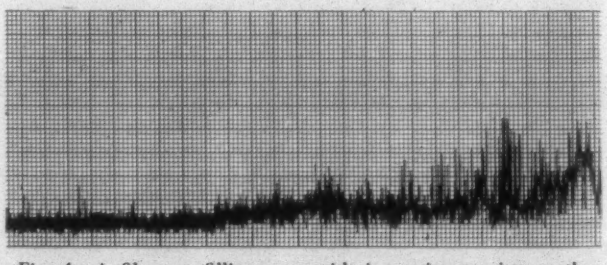


Fig. 4—A filament filling yarn with increasing tension as the bobbin runs empty. This characteristic would reflect a light streak or filling band after dyeing.

this defect occurs a study of warp preparation as far back as spooling or winding is in order. Uneven tension in any end or group of ends should be avoided. Irregular tension of warp threads is of serious consequence in taffeta and all close sley fabrics where a plain weave is employed and the finish is flat.

In most instances, the measurement of warper tension with the Uster tension recorder is accomplished by positioning the head of the instrument between the front of the creel and the warper drive. With this placement, the boom can be positioned easily, so that the head pulley will be in line with any end.

The most common fault found in the warper creel is the great increase in tension occurring in the interval between the front and the back of the creel. It is best to measure the tension from the same cone position in several different places at the back of the creel and at the front of the creel. Next, the minimum tension satisfactory for use at the back of the creel should be established and the tension on all other ends in the creel set up.

In most cases, eccentric beams and calender rolls can be indicated from the chart from the tension pattern of the yarn. The result of lost production at the warper creel usually results from package mis-alignment and worn guides or posts. A poor quality yarn may be caused in the warper creel by side variation of the tension ranges from end to end or full to empty supply package. These defects will show up as streaked effects in piece dyed goods.

The testing of tension of filling yarn as it comes from the shuttle contributes to the detection and correction of causes of broken picks, filling bands, kinky filling and bad selvages. Beside the width and model of the loom and the type of filling used, important factors in shuttle tension are: (1) length, diameter and wind of bobbin; (2) length of stroke; (3) butt size; (4) number of grooves in bobbin; and (5) shuttle characteristics such as length, inside width, eye, grip, tension and balloon control devices, and bristle type and placement.

The tension test is done by placing the shuttle on the recorder next to a drive on the Uster evenness tester. The recorder head is placed into position so that it will measure the tension using an "S" turn made with the yarn through the pulley. The evenness tester is then run at 100 yards per minute and tension measurements and charts made. Fig. 1 shows the chart made by kinky filling yarn. Fig. 2 shows filling yarn with high tension peaks that cause broken picks.

Fig. 3 shows a filling yarn with increasing tension as the bobbin runs empty. These high peaks in tension may cause broken picks or filling bands. They may be caused by improperly set tension devices in the shuttle itself. Fig. 4 also shows a filling yarn with increasing tension as the bobbin runs empty. This is filament yarn and would result in a greater difference in the molecular structure of the yarn. After dyeing this characteristic would reflect a light streak or filling band in the fabric.

Bleaching, Dyeing & Finishing

Dyehouse Data By Dodson

PACKAGE DRYING

PART ONE

Some years and several months ago, William C. Dodson authored a book entitled "Remedies For Dyehouse Troubles." In its foreword he said, "The author has never been able to find a book dealing with just that phase of dyeing which constitutes the day's work of the average mill dyer. Therefore, having realized personally the need of such a work and hoping to stimulate somewhat similar efforts on the part of more capable men, these chapters are being presented." It is with this same philosophy that Mr. Dodson again dips his pen to bring us some practical offerings on the art of dyeing.

By WILLIAM C. DODSON, Consulting Editor

A DYED or bleached package of yarn will dry, in time, if left on your desk, or in any other place where there is a movement of air across the package. However, this is only true if the air itself has a relative humidity of less than 100 per cent. The higher the relative humidity, the longer the drying time, regardless of the temperature of the air itself. At the same time, the greater the air movement across the package, at any given humidity, the shorter the drying time. The opposite of these conditions is equally true.

These factors, when grouped together in a short paragraph may at first glance seem confusing. However, if they are read separately and considered carefully, they will make a simple and clear basic picture of one of the most costly phases of the production of wet processed textile yarns.

From an economic standpoint, and that is the most interesting approach for most of you, desk drying is of course of no real interest. But before moving into the practical and production field it certainly is appropriate to first look at a few of the really controlling conditions. There are only a few of them, so let's go into each of the above factors a little more fully, somewhat as they are set down in the first paragraph.

Air Movement

If that damp package on your desk is subjected to the blast from an electric fan, here's about what happens: The damp outer layers of yarn will give up their moisture to the dryer air, the air acting somewhat as does a sponge

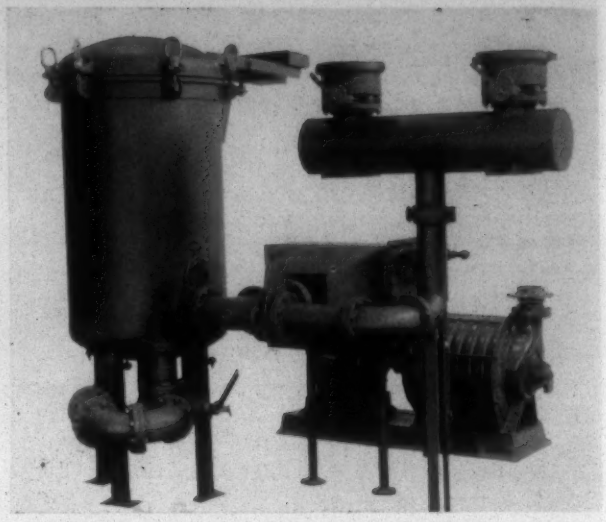
when one mops the film of water from a newly washed automobile. The movement of the air, then, serves as would a series of sponges.

Relative Humidity

If the air or the sponge does not become saturated to the point where it can no longer absorb additional moisture, drying will result. This saturation point of air is the 100 per cent relative humidity mentioned above. It can readily be seen, then, that once saturation is reached, no amount of time or of air movement can materially affect the drying process. Now let's go below the surface of the package where the moisture content is as it was on the surface before you switched on your fan.

As the surface layers become dryer than the underlying layers, they begin calling for more water, due to a physical law known as capillary attraction or capillary action. Just why this is true I haven't the vaguest idea, but I can refer you to something that is governed by the same law, and with which all but the youngest of you are familiar. It's the old kerosene lamp wick. As the flame over the wick consumes the original charge of oil, and the wick dries out somewhat, the particles of oil in the lower part of the wick move up, even against the pull of gravity, in order to replace those particles which have been used up as heat and light. I have been told that capillary action is the reason for this phenomenon, as it is for the movement of moisture from within the dyed package outward to the dryer surface layers. Capillary action or not, it works that way, and that is why the package on your desk does dry. If this action did not take place then you might conceivably dry the extreme outer surface, but end up with a permanently damp package interior.

Actually, a drying package is an interesting thing, and it can get somewhat more interesting and complicated when you have to dry a lot of packages at the lowest over-all cost. A number of odd, and mostly unpleasant, things can happen when you have too great an air movement—too high a temperature—too many impurities remaining in the package after dyeing or bleaching—too much moisture in the yarn before actual drying begins, and perhaps a few other conditions such as too long a time in drying. However, these few will serve to keep you bored or interested as we analyze each of them and/or combinations of them.



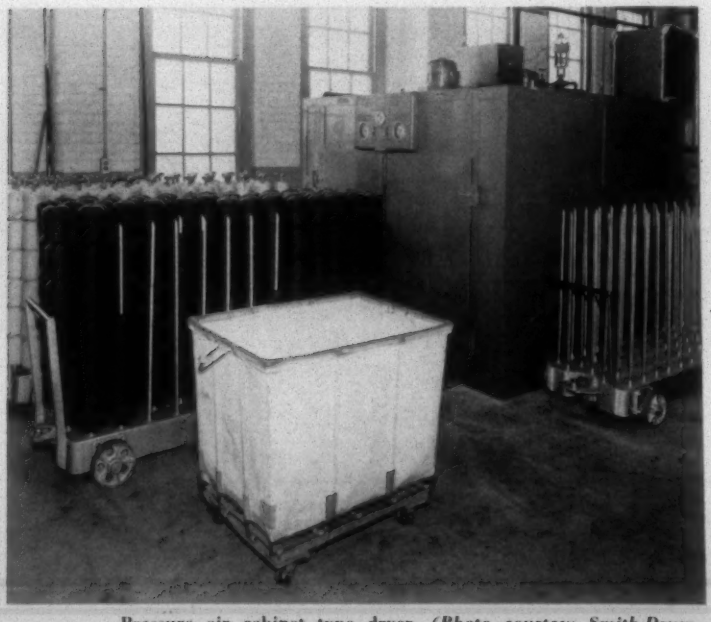
Combination pressure extractor, two-port dryer. ***(Photo courtesy Gaston County Dyeing Machine Co.)***

If you have stayed with me this far and find this thing of interest, let's go back to those two words, Relative Humidity. They are important. As I understand the meaning of it, relative humidity has to do with how much moisture a given quantity of air will hold, within itself in relation to the temperature of that quantity of air. In other words, how much water will a sponge hold without dripping?

Of course if you squeeze a damp sponge, it drips. So also if you cool or chill the given quantity of air it drips too; in the form of fog, for example, or as sweat on a cold window pane; because chilling reduces the volume of air and thus squeezes it. Now, if instead of squeezing the sponge, we could expand its size, it not only would not drip, but it would hold still more water. Well, I don't know how to expand a given quantity of sponge, but I do know that if you heat the given quantity of air *without confining it,* you expand it, and thus make it capable of absorbing more water. This is one of the main reasons for using heat when drying yarn. Another reason has to do with the vapor tension of water itself, but I think we can skip that one, at least for now.

Within reasonable limits, the higher we heat our quantity of air, the larger it gets, and the farther apart are its original contained water particles; and thus the more extra particles it will absorb before it becomes saturated. This, I think, is another way of saying, before it gets too crowded with moisture to accommodate even one more very small particle.

You know, it's a funny thing about this Relative Humidity, in that whereas we have considered that as we heat a given quantity of air we enlarge it and sort of scatter the original moisture particles through the expanded mass, we can also take that same original given quantity of air containing those same particles of moisture and by chilling it we reduce the space originally occupied by it; and thus



Pressure air cabinet type dryer. ***(Photo courtesy Smith-Drum Division, Turbo Machine Co.)***

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can supply closed system, static pressure, re-circulating, rapid yarn dryers in the United States and Canada.

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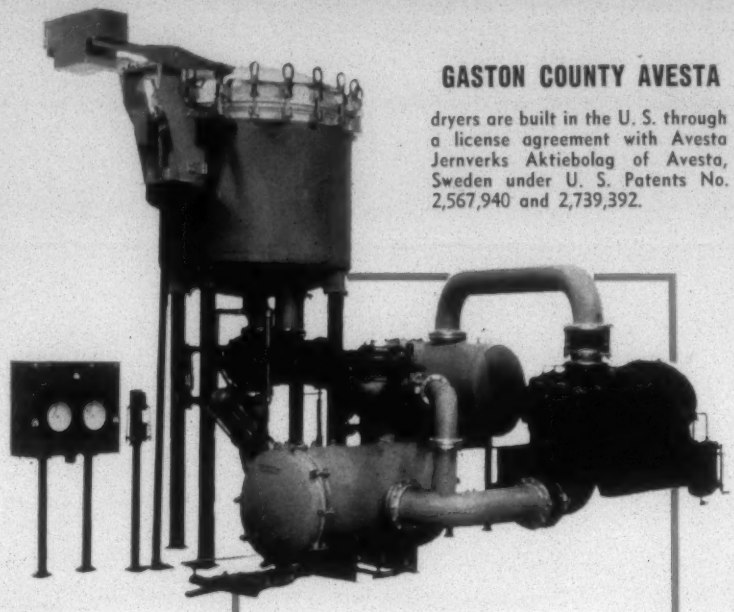
Design of machines is determined by package carriers available in customer's plant regardless of the original manufacturer.



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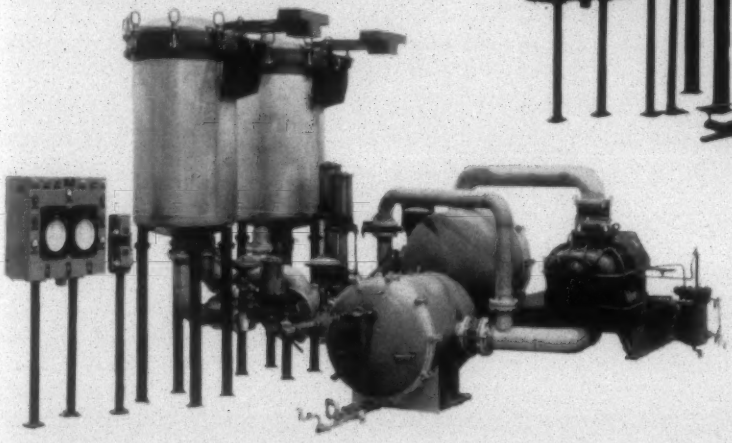
dryers are built in the U. S. through a license agreement with Avesta Jernverks Aktiebolag of Avesta, Sweden under U. S. Patents No. 2,567,940 and 2,739,392.



CONSTRUCTION

Machines are designed and built to ASME standards. The piping systems, heater housings, condenser housings, reversing valves and drying kiers are made of stainless steel. The kier lid may be made of stainless steel or carbon steel as specified. Carbon steel lids give satisfactory service since contamination from rust can usually be traced to carbon steel piping systems, heater housings, condenser housings, kier bottoms and kier walls.

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by chilling or squeezing it into a small enough area we make so little room for the original water particles that some of them have to get out of the way, resulting in precipitation.

This is easily seen on the chilling surfaces of your electric refrigerator. Once in a while the units must be defrosted so more moisture can be absorbed, etc., etc. The reason I am going into this effect in some detail is that in some of the newer types of package dryers, this very same condition is brought about deliberately. More about that later.

We seem to have pretty well looked into the two main factors in drying, and they are, in case you got lost on some of the detours: (a) air movement; and (b) the relative humidity of that moving air. So it's about time now to see how this works in the usual types of dryers employed in the commercial drying of packaged yarns. I will enlarge a little on each type.

(1) The circulating air cabinet type.
(2) The pressure air cabinet type.
(3) The pressure air port type.
(4) The pressure air kier type.
(5) The recirculating air condensing type.

Each of these five major types of dryers has its own advantages and its disadvantages, but at least any and all are preferable to stacking packages all over your desk as was mentioned earlier.

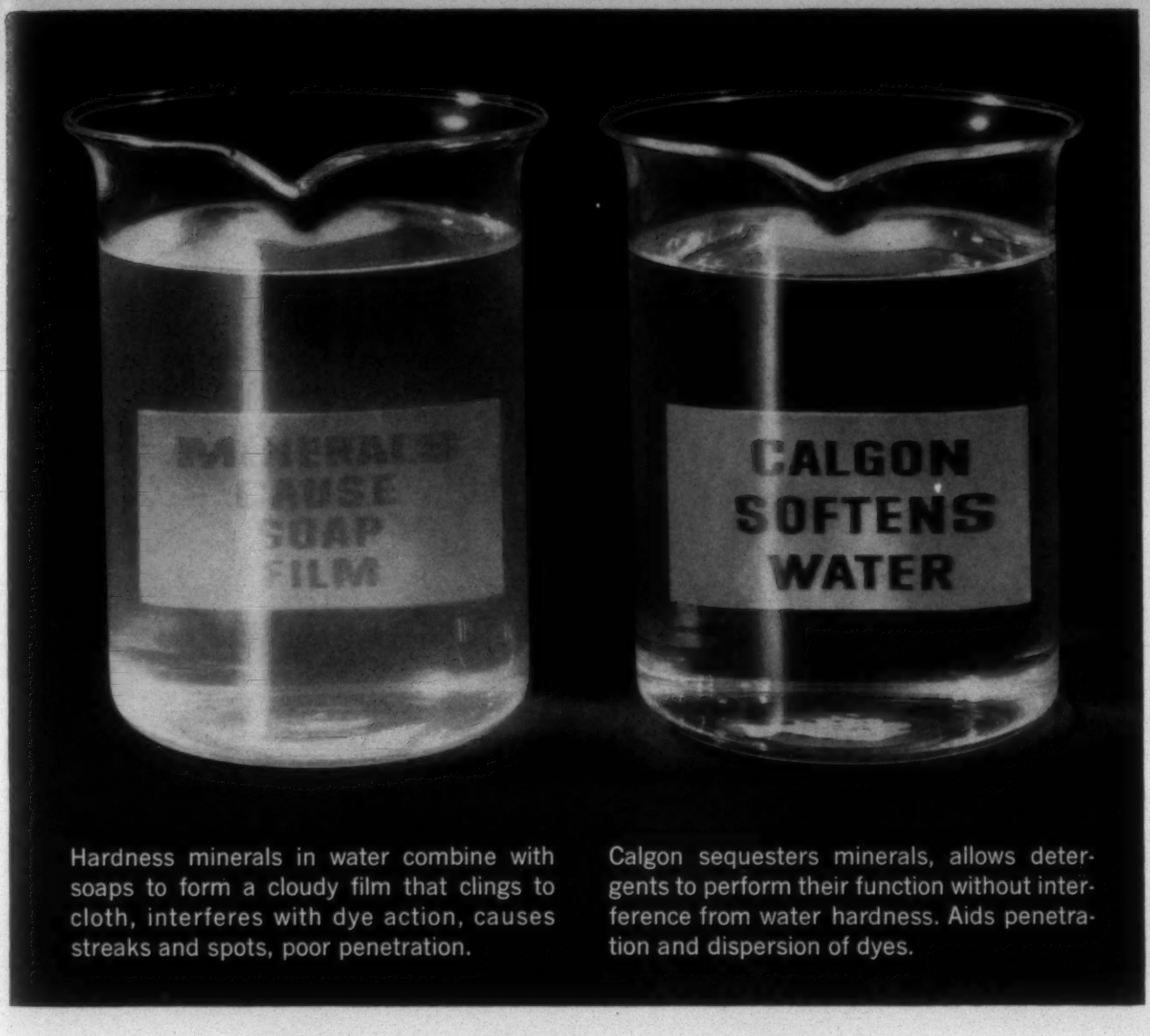
The Circulating Air Cabinet Type

This is an old, proven and slow dryer. It is basically an insulated room or cabinet, fabricated of structural steel framework, on which insulated sheet metal panels are bolted. It is generally rectangular in shape, of various lengths and widths to suit requirements of production, and is about 12 feet high. There are steam coils along the two sides and sometimes in the roof. Power driven fans are located in such places as to cause a flow of heated air over the coils and packages continuously during the drying cycle. There are adjustable inlets for a feed of fresh air and, of course, a vent stack through the roof for the evacuation of moisture laden air. Usually all the fresh air is taken from the room adjacent to the cabinet.

If it so happens that the feed air is relatively dry, so much to the good. If, on the other hand, the feed air is taken from the dyehouse itself, it probably carries with it a heavy charge of moisture which is obviously not so good. It's obvious all right, but often overlooked, and as a consequence drying time and steam consumption go up unreasonably. *Also*, if for reasons of carelessness or thoughtlessness, dry dyestuff is brought into the dyehouse, it can easily be picked up by the air current created by the suction of the fans. Contaminated yarn is practically certain to result sooner or later.

There are many such dryers in use, some of them almost as old as the practice of package dyeing itself. They are relatively inexpensive as to first cost. They require very little maintenance, and very little power for the fans. Air contamination of packages is low, as long as reasonable care is used in dryer location with relation to dust, dry dyestuff, smoke or fine fly ash from the boiler room. When contamination does occur, it is fairly easily seen since all of it will be on the outside of the packages.

However, with all these things in its favor, it has two major disadvantages. (1) It is a slow dryer, measured by



Hardness minerals in water combine with soaps to form a cloudy film that clings to cloth, interferes with dye action, causes streaks and spots, poor penetration.

Calgon sequesters minerals, allows detergents to perform their function without interference from water hardness. Aids penetration and dispersion of dyes.

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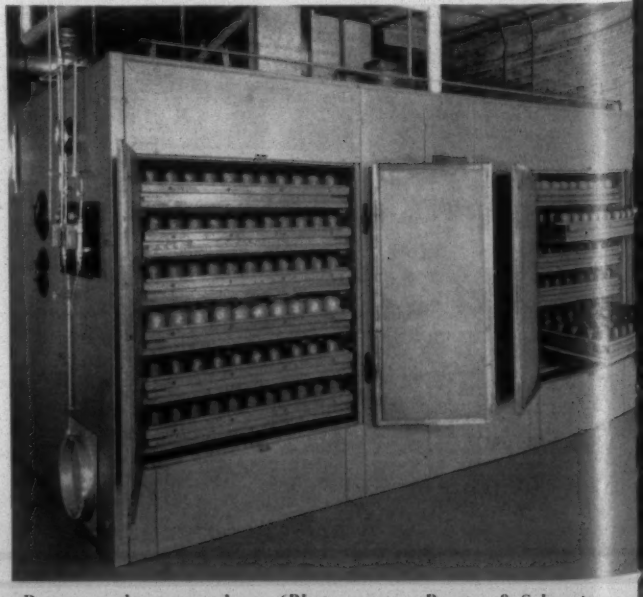
modern standards, and this means extra floor space for one thing. (2) It requires the repeated handling of packages; (a) centrifugal extraction prior to drying; (b) removal from the extractor; (c) placement of packages in trays; (d) insertion of trays in the cabinet; (e) removal of trays from the cabinet; (f) removal of packages from the trays; (g) greater probability of color migration due to the prolonged drying time; (h) greater probability of the migration of any soluable salts (and by migration I mean the movement of such soluables to the outer face of the packages, due to the same capillary action previously mentioned) and (i) increased possibility of yarn degradation due to prolonged heat.

It is also quite probable that steam consumption is greater than on some of the newer types, due primarily to the longer drying period. And don't mistake, steam is expensive in these days of high fuel costs.

The Pressurized Air Cabinet Type

Following the circulating air cabinet type dryer, let's dig into the somewhat more modern pressure air cabinet type machines. So far as I know, this type has been made only by one manufacturer, and incidentally, I had something to do with the invention, development and patenting of the equipment a number of years ago. This machine was the first real step toward high speed drying. In general shape and outward appearance, it is not too different from the circulating air type. It requires much less floor space, however, for any given number of packages, and the drying time is much less than that of the older machine. The principal advantages are a saving in floor space and a great saving in time of drying.

The disadvantages are partly those of the older machine. In addition to the same package handling routine, it also requires about 50 per cent more motive power to drive the air blower than is required by the fans, as mentioned earlier. Also, since air is forced through the packages from the inside to the outside, the problem of air contamination is



Proctor package yarn dryer. *(Photo courtesy Proctor & Schwartz Inc.)*

intensified, since most of the air used first impinges on the inside of the package. This machine does save time and floor space.

The yarn packages are loaded one above the other (six high) by threading them on specially shaped metal spindles. These spindles in turn are secured at their bases in a hollow, wheeled truck, and are designed to convey the blown air (about three pounds pressure per square inch) to the interior of the packages. The topmost package is sealed off by a tapered metal plug which fits into the package tube, thus allowing pressure to be exerted on the stack of packages.

The hollow wheeled truck with its load of damp packages is pushed into the cabinet of the dryer where a portion of the hollow truck fits snugly into a large socket leading to the blower. Air, under pressure, can be fed to all packages more or less uniformly. There are, of course, heating coils between the blower and the hollow truck. There are also banks of heating coils in the sides of the cabinet, and low horsepower fans to circulate heated air around the outside of all packages while the main blast of hot air is being forced through these packages from the inside.

In such a machine you find the combination of the earlier circulating air type plus the introduction of the forced air, relatively low pressure blower type. The latter effect is a kind of preview of the most modern types of high pressure machines. Such a dryer will turn out dried packages of any given size and original moisture content in about 75 to 80 per cent less time than is required by the older circulating designs. *(Continued next month)*

Maintenance, Engineering & Handling

Basic Motor Control Circuits

By M. R. BRICE

Manager, Service Sales Division

Cutler-Hammer Inc.

This paper, which was delivered before the Nov. 14-15, 1957, A.I.E.E. conference on Electrical Equipment For The Textile Industry held at North Carolina State College, Raleigh, describes some of the fundamental control circuits used in motor control, explains how they work and tells why they are made that way. The aim of the paper is to afford a better understanding of present controllers and also how to apply new controllers more effectively.

TO describe various control schemes we will use elementary diagrams, sometimes called schematic diagrams or line diagrams, so it might be well to review the mechanics of the elementary diagram and see how it is different from the ordinary wiring diagrams with which you are perhaps more familiar.

To illustrate, let us look at Fig. 1, a wiring diagram of a primary resistor type roving frame starter, used to provide a smooth, low torque start, to reduce broken ends. The control panel contains a starting resistor, a main contactor, a timing relay, an accelerating contactor, a thermal overload relay and necessary interconnecting wiring. Notice that the diagram symbols are simplified pictures of the devices with their terminals, each in its correct geographical location just as it appears on the control panel. The power wires are represented by heavy lines, the control wires by light lines and the outlines of the control panel and push-button station by broken lines. This type of diagram makes it easy to install and wire the controller, because the electrician can readily find each terminal to which he makes a connection.

This particular controller is not very complicated, so it is possible, with a little study, to figure out from the wiring diagram exactly how the controller works. However, using the elementary diagram Fig. 2, we can see at a glance exactly how the starter operates. In an elementary diagram we get rid of the geographical limitations of showing the actual physical location of parts on the panel. Instead, we arrange our parts on the elementary diagram based on functions. We even separate the individual contacts and coils of a single contactor or relay to show the control scheme more clearly.

Operation Of Starter

Notice that all of the power wiring is at the top and all of the control wiring is at the bottom of our elementary diagram. Pushing the *start* button energizes the coil of the contactor *M*, causing the *M* contacts to close, putting power on the motor through the resistors *R1-R2*, *R11-R12* and *R21-R22*. The normally open electrical interlock on contactor *M* also closes, so that *M* stays in when the *start* button is released. The coil of the timing relay *TR* is in parallel with the *M* coil so it also is energized. At the end of the

timing cycle of three or four seconds, the timed closing contact of *TR* closes to make circuit to the coil of contactor *1A*, whose contacts then by-pass the resistors to let the motor run at full voltage. The heater coils of the overload relay *OL* are shown in the motor circuit. The normally closed *OL* control contact is in series with the contactor coils, so that tripping of the overload relay will stop the motor. Pressing the *stop* button, or a power failure, also will cause contactor *M* to open. Since the *M* interlock also opens, the motor will not restart until we again press the *start* button.

Three Wire Control

The most basic circuit of electric motor control, the three wire control circuit, provides undervoltage protection. This is the effect of a device which causes and maintains an interruption in the power supply to the main circuit when there is a reduction or failure in the main power supply. On most machines it is an important safety feature, protecting the operator from injury and the machine from damage due to an unexpected restart after a power failure.

The three wire control's method of operation is seen from Fig. 3 (a). When the *start* push-button is pressed, a circuit is completed to energize the coil of the main contactor *M* and the contactor closes to apply power to the motor. An electrical interlock on *M* also closes, completing a circuit from two to three around the *start* push-button. The push-button is of the momentary contact type, so as soon as the *start* button is released its contacts open but the contactor coil is still energized through the electrical interlock and the motor continues to run.

If the line voltage should drop to a low value, or fail completely, or if the *stop* button is depressed, the magnetic contactor *M* will open, disconnecting the motor from the line. The *M* electrical interlock also will open, so the contactor cannot re-close until the *start* button is pressed. Thus the motor will not restart unexpectedly when power service is restored.

This is known as three wire control because three wires are used to connect the push-buttons to the starter. Most of the general purpose magnetic starters are used this way.

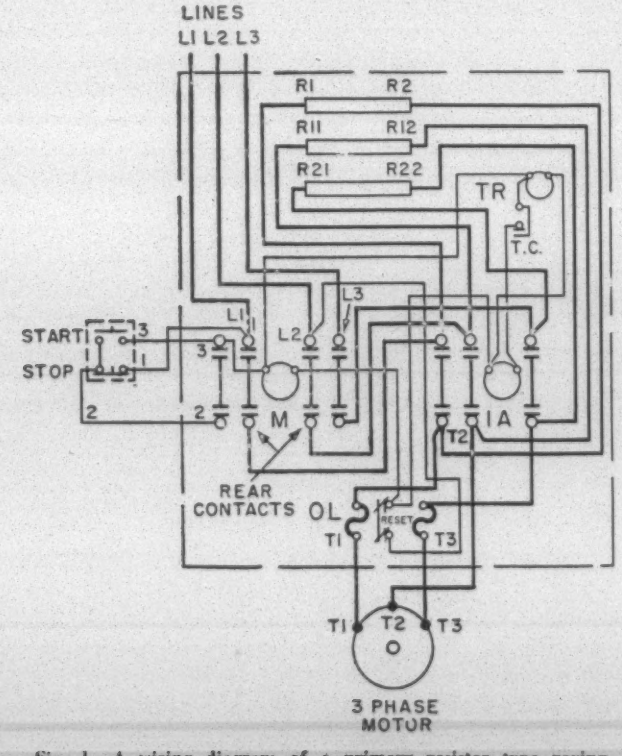


Fig. 1—A wiring diagram of a primary resistor type roving frame starter used to provide a smooth, low torque start to reduce broken ends.

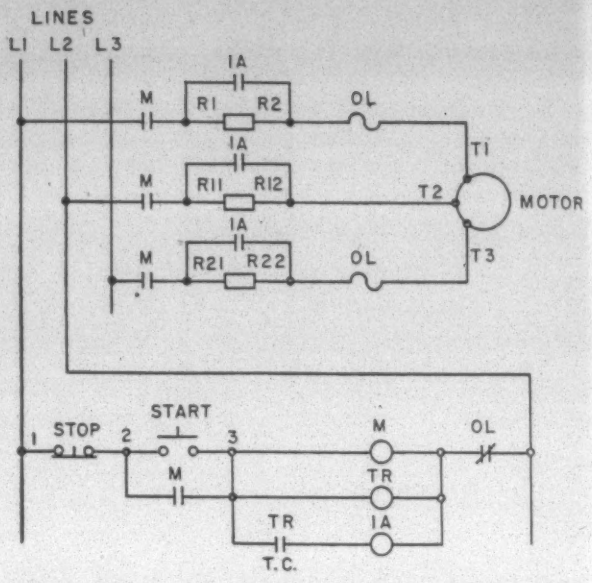


Fig. 2—Elementary diagram for roving frame smooth starter.

Two Wire Control

In some cases, undervoltage protection is both unnecessary and undesirable. We should not have to push buttons for air conditioners, ventilating fans, water pumps and such like to restart them after a power failure. Controllers for such applications are used with a two wire, maintained contact push-button station or a thermostat or a pressure switch or the like, to provide undervoltage release.

Undervoltage release is the effect of a device which causes an interruption in the power supply to the main circuits when there is a reduction or failure in the voltage supply, but which does not prevent the re-establishment of the power supply when the voltage supply reappears.

Our diagram sketch Fig. 3 (b) shows how it works. Closing the pilot device contacts across 1 and 3 energizes

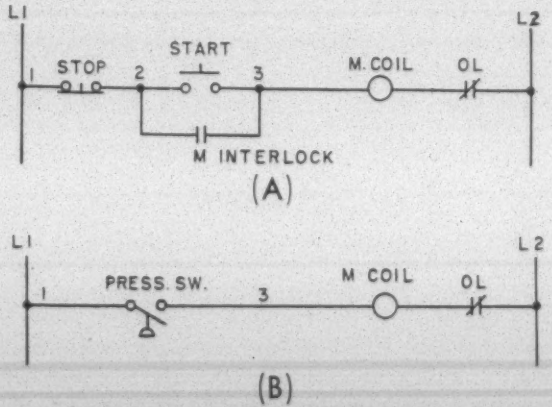
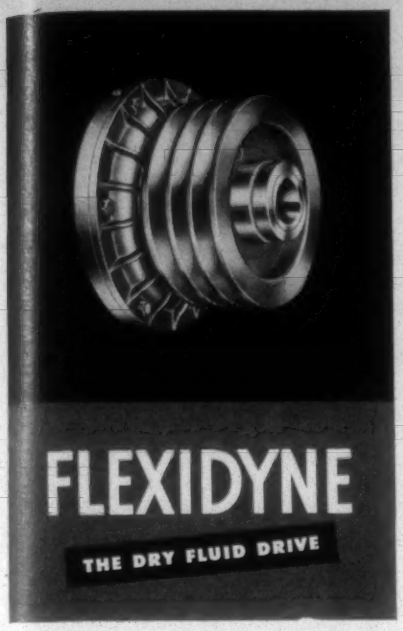


Fig. 3—(a) Three-wire control providing undervoltage protection. (b) Two-wire control providing undervoltage release.



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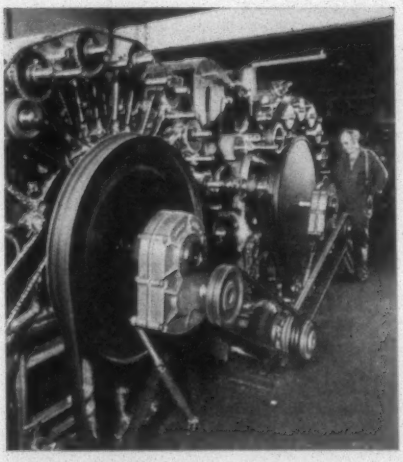
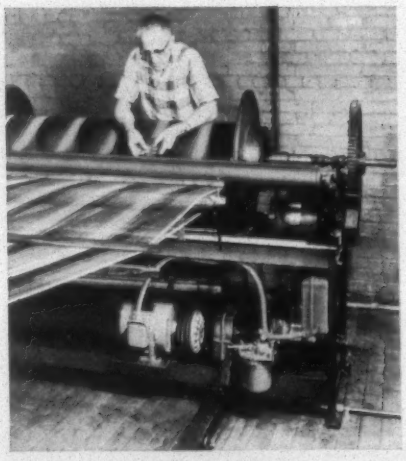
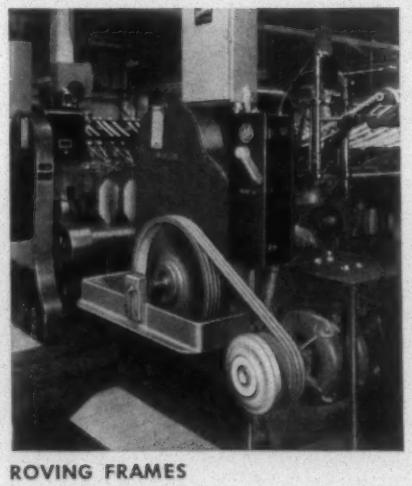


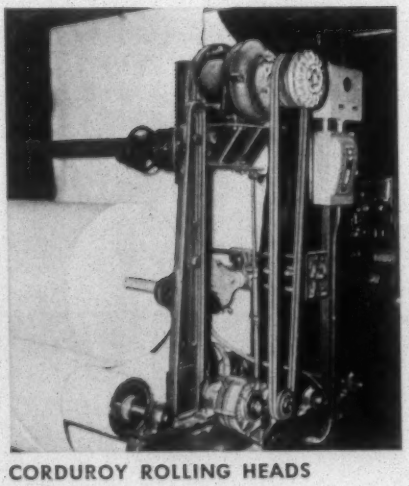
WOOL CARDS



LONG RAIL BEAM WARPERS



ROVING FRAMES



CORDUROY ROLLING HEADS

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the *M* contactor coil to close the contactor and start the motor. The pilot device contacts stay closed, so no electrical interlock is needed. If the line voltage should fail, the contactor *M* will open but when voltage returns *M* will reclose because the control circuit is still closed through the maintained contact pilot device.

When a motor is normally controlled from an automatic pilot device such as a pressure switch, sometimes it is desirable to provide means for starting or stopping independcently under manual control. This can be done by connecting a maintained contact three position pilot switch. With the switch turned to *automatic,* the pressure switch controls the motor. With the switch at *off* the motor cannot be started, and in the *run* position the *M* coil is energized whether the pressure switch contact is open or closed.

Sometimes we want to start and stop a motor from two or more different locations, such as the two ends of a spinning frame. This is easy to do with a three wire control circuit. Simply connect all of the start buttons in parallel and all of the stop buttons in series. Pressing any one of the start buttons will energize the *M* coil and the *M* interlock will maintain the circuit. Pressing any stop button will break the circuit to *M* and stop the motor.

Reversing Control

A reversing controller, as shown in Fig. 4, has two contactors, one for each direction. These contactors are mechanically and electrically interlocked to be sure that they cannot create a short circuit by both being closed at the same time. When the *forward* button is pressed, the *F* contactor is energized through the normally closed contacts of the *stop* button, through a normally closed interlock on the *R* contactor and through the normally closed contact of the forward limit switch, if one is used. The circuit is then maintained through the normally open *F* interlock. The normally closed *F* interlock in series with the *R* contactor coil opens, so that contactor *R* cannot operate. If limit switches are used, when the machine reaches the end of its forward travel the forward limit switch *FLS* opens, dropping out *F* and stopping the motor.

The motor cannot be restarted in the forward direction while *FLS* is held open. However, pressing the *reverse* button will pick up the *R* contactor and reverse the motor. If we should press the *reverse* button while the motor is running forward, nothing would happen because the normally closed *F* interlock would be open, preventing a circuit to the *R* contactor coil. We would have to press the *stop* button to drop out *F* and then we could pick up *R*.

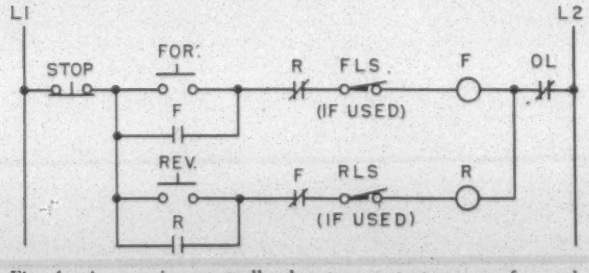


Fig. 4—A reversing controller has two contactors, one for each direction, which are mechanically and electrically interlocked to be sure that they cannot create a short circuit by both being closed at the same time.

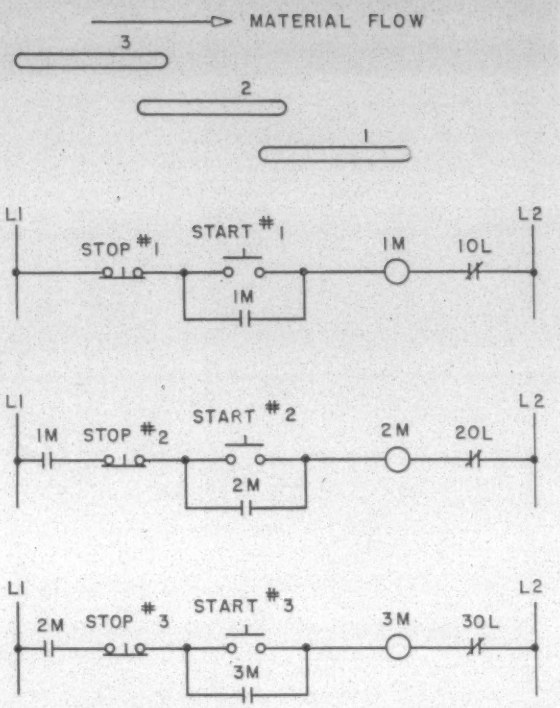


Fig. 5—Sequence interlocking of a system of three conveyors, with material flowing from conveyor number 3 to number 2 to number 1.

This connection often is desired to prevent accidental plugging of the motor.

Another connection can be used to transfer between forward and reverse without pressing the *stop* buton. We simply add a normally closed contact to the *forward* button and one to the *reverse* button. Now, if we are running in the forward position pressing the *reverse* button drops out the *F* contactor, closing the *F* normally closed interlock and picking up the *R* contactor. This connection is used where it is permissible to plug the motor, that is, reverse it without stopping, and where easy, fast reversal is required.

Sequence Interlocking

Sometimes it is important that one motor should not be able to run unless another motor is running, as in the case of a conveyor or a cleaning, blending and picking line. This can be accomplished easily by using electrical interlocks on the starters as shown in Fig. 5, representing a system of three conveyors, with material flowing from conveyor number three to number two to number one. If the conveyor number one should stop with two and three running, material would of course pile up. We can prevent this trouble by proper sequence interlocking of the controller.

The starter for conveyor number one operates under a conventional three wire control system, so number one can be operated whether two and three are running or not. However, we add an extra normally open electrical interlock to the contactor 1M of starter number one and we connect the 1M interlock in series with the *stop* button of starter number two. Thus, the coil of 2M cannot be energized unless 1M is closed and conveyor number two cannot run unless number one is running. If number one should stop for any reason—voltage failure, pressing the *stop* button, or tripping of the overload relay—number two will stop also, to prevent a pile up of material. In the same way, starter number three is interlocked with number

two. The system must be started by pressing *start* buttons one, two and three in that sequence. It can be stopped in the reverse sequence to clear the conveyors, or all three can be stopped at once by pressing the number one *stop* buton.

Note that the scheme shown keeps the individual starter circuits separate, each behind its own disconnect switch and fuses. We have seen interlocking circuits created by inexperienced people with power and control circuits of separate starters tied together. These would work under normal conditions but would fail on the blowing of a fuse or the tripping of an overload relay. We strongly recommend keeping the circuit clean cut as shown in our diagram. In most cases the extra electrical interlock required can be purchased as an inexpensive standard assembly.

Conclusion

The control schemes we have talked about are the most widely used basic motor control circuits and appear in the majority of applications. Many of the more complicated motor controllers are made up of combinatons of these or similar circuits. A thorough understanding of these few fundamental circuits should be very helpful in the application of electric motor control equipment in your plants.

Promotions, Resignations, Honors, Transfers, Appointments, Elections, Civic and Associational Activities

PERSONAL NEWS

J. Spencer Love

J. Spencer Love, chairman of Burlington Industries, will serve as a vice-chairman of the 1958 Special Gifts Campaign of the National Conference of Christians and Jews. Mr. Love will head the work of securing large gifts among members of the textile industry whose leaders are sympathetic to the National Conference of Christians and Jews and its program to strengthen the bonds of national unity among the country's different religious, racial and ethnic groupings.

Elliott Cleveland, formerly with Laurens (S. C.) Mills and Gayley Mill Corp., Marietta, S. C., has been chosen as preparation overseer for the mill in Tehran, Iran, to be operated by United Merchants and Manufacturers Inc. under contract with the Iranian Government.

Sam Littlejohn has been named assistant vice-president and executive director of the finishing division of American & Efird Mills Inc., Mt. Holly, N. C., manufacturer of yarn, succeeding George W. Pierce, who has resigned. Mr. Pierce did not reveal his future plans.

Herbert Pickford, vice-president and general manager of the Crompton Highland Mills Inc., Griffin, Ga., and the Arkansas Mills, Inc., Morrillton, Ark., will be transferred to Crompton headquarters in Waynesboro, Va., on June 1. Mr. Pickford was transferred to Griffin in 1942. In 1948 he was named vice-president and general manager of both the Crompton Highland and Arkansas mills. He will continue to exercise general supervision of the two plants and will assume general supervision of Crompton activities in Waynesboro. . . . James T. Doughtie, plant manager of the Arkansas mill, will be transferred to Griffin to take over active management of operations there. Mr. Doughtie served as assistant superintendent in Griffin until 1952 when he was transferred to Arkansas as general manager.

Whitworth F. Bird, chairman of the board of Collins & Aikman Corp., Philadelphia, Pa., has announced that he will retire March 1. Mr. Bird's retirement, together with his resignation as chairman, culminates 32 years of active service with Collins & Aikman. During this period he has served as director of research, executive vice-president, president and chairman of the board. It is understood that Mr. Bird will continue as a member of the board of directors.

Merwin R. Haskel, executive vice-president of United Merchants and Manufacturers Inc., was presented with a "Heart of Gold" citation by Dr. Jere W. Lord Jr., president of the New York Heart Association for his devoted work and thoughtful leadership in the interest of the heart fund. Mr. Haskel is serving in the 1958 heart campaign as over-all chairman of the Textile Division.

George W. Bricker Jr. has announced his re-entry into the field of independent management consulting, following his resignation as vice-president in charge of organization planning for the Celanese Corp. of America. He will have headquarters in offices at 10 E. 49th St., in New York and will continue to serve as an independent consultant to the Celanese firm, of which he had been a member since 1952. Mr. Bricker has a background of more than 30 years in management consulting, particularly the fields of organization, industrial marketing and anti-trust litigation. From 1936 to 1952, he was a member of the management consulting firm of Robert Heller & Associates, Cleveland, Ohio. Previously, he had been engaged for 11 years in consulting work for the public utilities industry, in Boston and New York. He is a member of the Society for Advancement of Management, the American Management Association and the National Industrial Conference Board.

Harold Faust was installed as president of the Twenty-Five-Year Club of Ciba Inc. last month, succeeding Fred Schlapp.

Murray D. Ewing has been appointed to the newly created position of director, new product merchandising, for Celanese Corp. of America's textile division. Mr. Ewing will be responsible for planning and coordinating merchandising programs for Celanese textile fibers that are entering new markets. Prior to joining Celanese in January 1956, Mr. Ewing was associated with Alexander Smith Inc., carpet manufacturers. His most recent position at Celanese was that of assistant manager of the mill sales relations department.

Horace B. Bladon has been appointed general sales manager of the H. F. Livermore Corp., Boston, Mass., manufacturer of loom parts. Mr. Bladon will have overall supervision of sales in the U. S. and Canada. A native of Montreal, Canada, Mr. Bladen attended McGill University. Prior to joining Livermore, he was the U. S. representative and a director of William Hollins & Co. Inc. of England. He has worked as executive assistant to the vice-president of Nichols Chemical Co. Ltd., a division of Allied Chemical & Dye Corp. and as an officer of Folkard & Lawrence Inc., textile importers. Mr. Bladon will

make his headquarters in Greenville, S. C. at the company's newly-built sales office.

C. P. Moore

C. P. Moore has been appointed special representative for the chemical division of the Goodyear Tire & Rubber Co. With headquarters in Charlotte, N. C., Mr. Moore will service textile accounts in both North and South Carolina. He joined Goodyear in 1957 with more than eight years of experience as research chemist and production supervisor in the textile industry. Following a preliminary sales training program, he was assigned to direct field duties. He was graduated from Catawba College, Salisbury, N. C., with a bachelor's degree in chemistry, and is active in the American Association of Textile Chemists & Colorists and the Southern Rubber Group.

A. W. (Bud) Thomas Jr. has been named executive vice-president and general manager of U. S. Textile Machine Co., Scranton, Pa. Mr. Thomas is a second generation member of the organization, and has been with U. S. Textile Machine for many years. In 1945, he was named assistant to his father, A. W. Thomas Sr., who directed the firm in the role of secretary and general manager. Mr. Thomas has been in charge of the company's sales activities since 1949. He was elected vice-president and a member of the board of directors following his father's death in 1953 and director of sales in January of 1957 . . . Herbert Gleitz has been re-elected president and John B. Kingsley re-named secretary and treasurer of the company . . . Don W. Scheuer, who has operated a machine building service in the Scranton area for many years, was appointed to the newly created post of assistant general manager.

C. C. Cayce, branch manager of the Charlotte, N. C., office of the dyestuff division of General Aniline & Film Corp. was installed as president of the division's Twenty-Five-Year Club at its annual meeting recently in New York City. . . . Louis R. Waddey, branch manager at Chattanooga, Tenn., and J. Hagood of the Charlotte office were initiated at the meeting, bringing the total active membership to over 150.

Gus Englund, formerly vice-president of the Prior Chemical Co., New York City, has joined F. H. Ross & Co., Charlotte, N. C., as manager of national sales. Mr. Englund will make his headquarters in Charlotte.

J. D. Hershey has been named director of public relations for the Dayton Rubber Co. succeeding Ray L. Wetzel who retired March 1. A veteran of 27 years with Dayton Rubber, Mr. Hershey started as a copy writer in the tire division and rose to director of sales promotion and advertising. He is a past president of the Dayton Advertising Club and has served as a member of the program committee of the Association of National Advertisers.

A. J. Haselden

A. J. Haselden has been named general manager of the F. A. Young Machine Co., Gastonia, N. C., manufacturer of textile equipment. Mr. Haselden joined the then Norlander Machine Co. 20 years ago as a truck driver and has since served in every department. Prior to his promotion he served as plant manager. . . . George Riddle, formerly plant superintendent, has been named to the post of plant and production manager. He joined the company in 1941 as a workman in the flyer department. . . .

George Riddle Charles Webster

Charles Webster has moved up to the position of chief engineer with the company. He joined the firm in 1946 as a machine operator and was later promoted to sales. Mr. Webster's last position was that of new development engineer. . . . John Quinn, who has been with the company for 16 years, has been named plant superintendent. . . . Thomas Quinn has been promoted from inspector in two departments to chief inspector and assistant shop superintendnet. He has been with the company for eight years.

George W. Pierce has resigned his position as assistant vice-president and executive director of the finishing division of American & Efird Mills Inc., Mt. Holly, N. C., in order to head a company doing business in the dyeing and finishing field. He will operate in the Charlotte, N. C., area about the middle of June.

Nobles L. Killibrew has been named resident sales representative for Celanese Corp. of America's newly-established textile sales office at 3179 Maple Drive, N.E., Atlanta, Ga. He will handle sales of all Celanese fibers and yarns in Georgia and neighboring states. Mr. Killibrew, a graduate of North Carolina State College, has been stationed at the company's textile division headquarters in Charlotte, N. C., for the past two and one-half years. Prior to that, he was with Borne, Scrymser Co., Chattanooga, Tenn. The new office in Atlanta will be under the supervision of the Celanese Southern district sales office at Charlotte.

D. Cameron Turrentine Jr. has been named a vice-president of J. P. Stevens & Co. Inc. Mr. Turrentine joined the company following his graduation from Clemson College in 1930. In 1946 he was appointed assistant general manager and later general manager of four of the company's plants

Courant, Wiehart, Nehl, Vogelsang, Campbell

HIGH AUSTRIAN OFFICIAL VISITS NORTH CAROLINA STATE COLLEGE—Dr. Johann Vogelsang, section chief of Austria's Federal Ministry of Education, visited the School of Textiles at North Carolina State College recently to get a first hand look at what the school has to offer its textile students. He is pictured here in the school's library with Harold Courant, State Department interpreter; Johann Wiehart, now in his second year as a textile chemist at N. C. State under the auspices of the International Co-Operation Administration; Peter Nohl, a State College student from Tyrol, Austria; and Dr. Malcolm E. Campbell, dean of the college's School of Textiles.

in the Greenville area. For the past two years he has served as executive vice-president of Rosemary Mfg. Co. and Roanoke Mills Co., divisions of J. P. Stevens & Co. in Roanoke Rapids, N. C. . . . W. L. Medlin has been named to the position of assistant secretary of the company. He has served as secretary of Roanoke Mills and Rosemary Mfg. . . . J. P. Stevens Jr. has been re-elected president of the company and Joseph H. Sutherland was re-elected chairman of the board.

John W. Connell has been appointed to the newly-created position of assistant to the president of Indian Head Mills Inc. Most recently Mr. Connell has been manager of the Cheraw, S. C. division of the company in charge of manufacturing and customer service of the finished fabrics operations. Previously he was salesman, sales manager and field sales manager of the finished fabrics division. . . . M. Courtney Lankford, who has been with the company for twelve years as a salesman in the Baltimore territory, will succeed Mr. Connell as Cheraw division manager. . . . Stephen J. Niven, present Pittsburgh sales representative has been named to replace Mr. Lankford covering Maryland, Virginia and North Carolina.

Ray E. Nelson

Ray E. Nelson, formerly general manager of Joy Throwing Co. of Hartsville, S. C., has joined Burlington Throwing Co. as head of technical services and sales, covering the full-fashioned, seamless knitting and industrial yarn fields. Mr. Nelson will make his headquarters in High Point, N. C., at the Hillcrest Plant of Burlington Throwing Co.

Ray Gordon, The Kendall Co., Charlotte, N. C., has been named president of the Textile Quality Control Association, succeeding Kelly Waits, Joanna (S. C.) Cotton Mills. Other officers named at the Spring meeting in Greenville, S. C., were Lane C. Drye, Linn Mills Co. and Corriher Mills Co., Landis, N. C., vice-presidents; Bob Miraldi, National Cotton Council, Washington, D. C., secretary; and Roger Jackle, North Carolina State College, Raleigh, N. C., treasurer.

J. H. Robbins has assumed the duties of superintendent of Aragon (Ga.) Mills. A native of South Carolina, Mr. Robbins is a graduate of Davidson (N. C.) College. He has had many years of experience in cotton and rayon industries in his own state, as well as North Carolina and Virginia.

J. E. Cheatham Jr., secretary of the Micolas and Opp Cotton Mills, both in Opp, Ala., has been elevated to the post of vice-president and controller. . . . M. J. Dick, formerly assistant secretary, will succeed Mr. Cheatham as secretary.

Richard C. Scott has joined Roberts Co., spinning machine firm of Sanford, N. C., as advertising manager. Formerly assistant to the publisher of *America's Textile Re-*

porter, Mr. Scott headed the magazine's editorial operation in the South, working out of Greenville, S. C. Before joining the *Reporter* in 1956, he was for three years assistant advertising manager of Saco-Lowell Shops, Boston, Mass., textile machinery firm; and from 1948 to 1953 he was New York editor of *Textile World*. He had previously worked for Dan River Mills, Danville, Va., and for the former Esmond Mills. Mr. Scott is a graduate of Brown University and is a member of the American Association for Textile Technology, the Southern Textile Association and the Textile Quality Control Association.

Dederick A. Spencer

Dederick A. Spencer has joined the staff of Howard Brothers Mfg. Co., producers of card clothing, napper clothing and hand stripping cards, and will be located at the company's branch in Greenville, S. C. Mr. Spencer has served with Pepperell (Ala.) Mfg. Co., Merimack Card Clothing Co., Andover, Mass., and Saco-Lowell Shops, Boston, Mass.

William H. Beattie has been named chairman of the board of Woodside Mills. Mr. Beattie had been president of the firm since 1946 and prior to that was vice-president and treasurer . . . Robert S. Small succeeds Mr. Beattie as president He has been vice-president and a director since 1951 . . . S. A. Hickox, formerly secretary and treasurer, has beeen named vice-president and treasurer . . . B. F. Tipton becomes a vice-president . . . D. E. Cromwell has been appointed assistant vice-president . . . Arch Wallace has been named secretary.

Edmund M. Diaz has been named director of industrial relations of the Clover (S. C.) plants of the American Thread Co. He succeeds C. O. Morgan who was recently named to the position of superintendent of the Hawthorne Plant and the rug unit. Mr. Diaz first joined the company in June 1957 as industrial relations assistant in the main office of the company in New York City. He is a graduate of Wagner College and received his master's degree in industrial relations from the Graduate School of Business, Columbia University.

Alester G. Furman III has been elected president of Alester G. Furman Co., Greenville, S. C., succeeding his father, Alester G. Furman Jr., who was named chairman of the board. Mr. Furman III, who was vice-president and treasurer, is succeeded as treasurer by Harold O. Gaddy.

R. L. Floyd, superintendent of the Union, S. C., plant of the Union-Buffalo Mills, will head a group of textile executives which left March 13 to manage a new textile plant at Tehran, Iran. Mr. Floyd has been superintendent of the Union plant for the past eight years, and with the United Merchants & Manufacturers Inc., owners of the Union plant, for 13 years. The company has contracted with the Iranian government to provide technical and managerial personnel to put a textile plant in operation at Tehran.

George M. Thurmond, president and treasurer of Thurmond & Co., Inc., joined Pacific Mills on March 1 as vice-president and will head wool and top buying activities of the company. Mr. Thurmond, for many years associated in wool buying capacities with Draper & Co. of Boston, was president of Draper Top Co. from 1945 to 1950. In 1950 he formed Thurmond & Co. Inc., which in the near future will withdraw from wool activities. Mr. Thurmond will continue to make his headquarters in Boston.

Clyde L. Parham, superintendent of the Brandon Mill of Abney Mills, Greenville, S. C., has been named president of the Greenville Textile Club, succeeding Earle R. Stall Jr., vice-president of the Florence Division of Cone Mills Corp. . . . W. G. Humphrey of Judson Mills, a division of Cotwool Mfg. Co., was elected vice-president. . . . D. W. Stevenson, of the Greenville County Schools was re-elected secretary-treasurer.

William V. Goodhue

William V. Goodhue has been named vice-president in charge of research and development at Universal Winding Co. Mr. Mr. Goodhue joined Universal in 1946 as associate director of research and became director of research in 1956. He has been instrumental in the development of many of Universal's new machines and processes for the textile and electronic industries. During its development stage, he was in direct charge of the Unifil Loom Winder, a new machine for winding filling yarn at a loom that is now being sold by Universal.

Charles H. Apperson has been promoted to a group leader in the Chemstrand Corp.'s research and development division. He will head the solution spinning group in the chemical textile fiber manufacturer's research operations. Mr. Apperson was with the Tennessee coal and iron division of U. S. Steel Corp. at Birmingham, Ala., before joining Chemstrand in early 1952. A native of Birmingham, he attended Howard College and graduated from Alabama Polytechnic Institute in 1949. He is a member of the American Institute of Chemical Engineers.

Victor Saxl, vice-president of Stellamcor Inc., New York City manufacturer of textile machinery, has been appointed by the U. N. Technical Assistance Program to go to Uruguay and prepare a survey on the wool textile industry of that country. Mr. Saxl will work with the Textile Industry Association of Uruguay at the request of that government. He will deal with such problems as the technical and administrative organization of the industry, the efficiency of machinery, the quality and availability of raw materials, productivity and the quality of goods produced. He will also discuss the possibility of increasing the country's exports. Mr. Saxl is a member of the American Association of Textile Technology, the American Society for Testing Materials and the American Society of Mechanical Engineers, and is a graduate of the University of Prague. Fred S. Levy, secretary of Stellamcor, will carry on all company transactions as usual during Mr. Saxl's short-term appointment.

Worthy B. Evans, a sales engineer for several years with the Saco-Lowell Shops' district office in Atlanta, Ga., has been appointed general sales manager of J. A. Quinn & Sons, manufacturers of textile products, Greenville, S. C. Mr. Evans' duties will include the co-ordination of the company's expansion plans. The firm specializes in opening and picking machinery for textile mills.

M. Weldon Rogers has been elected a director and vice-chairman of the board of Exposition Cotton Mills Co., Atlanta, Ga. Prior to joining Exposition, Mr. Rogers was a senior vice-president, member of the executive committee and a director of Burlington Industries Inc. as well as president of Ely Walker Dry Goods Co., St. Louis, Mo., a Burlington subsidiary.

H. Grady Hudgins has been named purchasing agent for Flint River Mills, Albany, Ga., producer of narrow sheetings and drills. . . . L. H. Rice is now general manager of the company.

William D. Crowson has been promoted from assistant foreman of the Beck Dyeing Department at the finishing mill of Fieldcrest Mills Inc. Mr. Crowson has been with Fieldcrest since 1946 when he started as a technician in the chemical laboratory of the research and quality control department. He attended Duke University where he majored in business administration. . . . Three of the company's towel mill production employees have been appointed assistant foremen after a pre-supervisory training period of about a year. They are Eugene H. Aldridge, assistant foreman in the weave room, third shift; Norman E. Dodson, assistant foreman in the weave room, second shift; and Jack K. Turner, assistant foreman in the spinning department, third shift.

J. P. Bainbridge Jr.

John P. Bainbridge Jr., formerly associated with Monsanto Chemical Co., has joined Penick & Ford Ltd. Inc., as assistant sales service manager. His headquarters will be at Cedar Rapids, Iowa. Mr. Bainbridge graduated as a chemical engineer from Massachusetts Institute of Technology in 1956 and immediately joined Monsanto. Mr. Bainbridge has had extensive experience in the development and sales of chemicals to the textile industry.

Alexander J. V. Thelen has been elected temporary president of Charlottesville (Va.) Woolen Mills Inc. The company has not

had a president since the death of Llewellyn P. Haden in July 1956. Mr. Thelen will continue as vice-president and trust officer for Citizens Bank & Trust Co. in Charlottesville. . . . Herbert J. Smith Jr. has been elected vice-president in charge of manufacturing. . . . George W. Knox has been elected vice-president in charge of finances. . . . S. V. Jamme has been elected secretary-treasurer of the company.

Southern States Equipment Corp. recently announced two changes in its Carolina sales organization. C. H. (Charlie) Kennington, for years Southern States' sales representative in the Carolinas, has been promoted to sales supervisor. . . . William N. Watkins has been appointed as sales representative in the area formerly served by Kennington.

Joseph G. Shedd

Joseph G. Shedd has been appointed general manager of manufacturing at Fulton Bag & Cotton Mills, Atlanta, Ga. Fulton, founded in 1868, manufacturers cotton fabrics and textile products. For the past eight years Mr. Shedd was vice-president and general manager of Lane Cotton Mills Co., New Orleans, La. He also had served as resident manager, Monarch Mills, Union, S. C., and division manager for Dan River Mills Inc., Danville, Va. Mr. Shed has been actively engaged in cotton manufacturing since he received his degree in textile engineering from Clemson College in 1929. At his new post with Fulton Bag & Cotton Mills, he will be in charge of the operations of the cotton mills, bleachery and finishing plant. Also, under his supervision will be all warehousing, shipping and engineering.

Lawrence J. Horan

Lawrence J. Horan has been named manager of the Southeastern division of National Starch Products Inc. with headquarters in Atlanta, Ga. In his new assignment, Mr. Horan will be responsible for over-all operation and supervision of textile sales and technical service groups. He will also work on the promotion of specific products for the textile industry. A native of Illinois, Mr. Hogan graduated from the Illinois Institute of Technology where he received his degree in chemical engineering. He joined National Starch in 1950 as a salesman in adhesives. After three years he transferred to resin sales for the paint industry and was appointed supervisor, Midwest resin sales in 1955. From January

Raymond E. Henderson has been elected to a vice-presidency in the Chatham Mfg. Co., Elkin, N. C. Mr. Henderson has been director of manufacturing since December 1954. As vice-president in charge of manufacturing, he will continue to administer all manufacturing at the Elkin plant. . . . Two new directors were also elected by the company. They are Archie K. Davis, board chairman of Wachovia Bank & Trust Co., and Calder Womble, Winston-Salem, N. C., attorney.

Dr. John Menkart has joined the staff of Harris Research Laboratories, research consultants to the textile and allied chemical industries. He will direct research projects concerned with keratin fiber chemistry. Previously, Dr. Menkart was with the Textile Research Institute in Princeton, N. J., as assistant director of research dealing with a wide variety of research problems on wool.

OBITUARIES

Robert Barnwell, 77, vice-president of Lockwood Greene Engineers Inc., leading textile designers and architects of Spartanburg, S. C. and Boston, Mass., died at his home recently. He was associated with the Bigelow Sanford Carpet Co. in the construction of its Landrum (S. C.) Mills. Mr. Barnwell was a member of the Engineering Society of South Carolina, the National Society of Professional Engineers and the American Cotton Manufacturers Institute. Survivors include his wife, a son and two daughters.

James Barr, 78, formerly sales manager of David Gessner Co., manufacturer of textile finishing machinery, Worcester, Mass., died February 12 in Miami, Fla., of a heart

attack. Mr. Barr retired from Gessner in 1953 and moved from Worcester to Florida. A native of Scotland, Mr. Barr came to the U. S. and to Worcester in 1901 and went to work for David Gessner in 1903. He continued his association uninterrupted for fifty years. He is survived by his son, Hugh H. Barr, who is associated with J. P. Stevens & Co. Inc., New York City; a daughter and his widow.

Glenn W. Grier, 75, retired veteran textile executive, died February 21 at his home in Smithfield, N. C., after a brief illness. For many years Mr. Grier was secretary and manager of Fairmont Mfg. Co., Fairmont, S. C. He left there 28 years ago to become secretary of Johnson Mills of Eastern Mfg. Co., Selma, N. C. He retired eight years ago. Survivors include a son, Glenn W. Grier Jr., who succeeded him at Eastern, and his widow.

Dr. W. K. Gunter, 75, owner and president of Derry Damask Mill Inc., Gaffney, S. C., died at his home in Gaffney last month. His widow and two sons survive.

Alfred K. Landau

Alfred K. (Fritz) Landau, 73, director of sales research for Saco-Lowell Shops, died February 28 after a prolonged illness. Born in New Orleans, La., Mr. Landau lived in that city until his graduation as a chemical engineer from Tulane University. After a year as a sugar chemist in Cuba, he returned to New Orleans and entered the textile industry, with the Lane Cotton Mills of New Orleans. He joined Saco-Lowell in 1910 and was assigned to the Charlotte, N. C., sales office. In 1914, he left the company to operate the Bertha-Dale Mill in McComb, Miss., of which he was a part owner. He rejoined Saco-Lowell in 1930 as advertising manager, with headquarters in Boston. Later he became director of sales research.

M. B. Leath, 82, for many years assistant treasurer of the Hannah Jickett Mill, Rockingham, N. C., died last month after suffering a stroke in January. Mr. Leath, together with the late W. B. Cole, took over the Hannah Pickett plant in 1920. In 1944 it was sold to the Safie interests and was closed in December of 1957.

MILL NEWS

CONSTRUCTION. NEW EQUIPMENT. FINANCIAL REPORTS. CHARTERS. AWARDS. VILLAGE ACTIVITY. SALES AND PURCHASES

GREENSBORO, N. C.—Earnings for J. P. Stevens & Co. Inc. for the first quarter of the 1958 fiscal year were $1,485,000, 28 per cent off the total for the same period a year earlier. Per share earnings for the first quarter, which ended February 1, amounted to 35 cents as compared with 52 cents for the same period in the previous year. In his report to the stockholders at the recent annual meeting, President Robert T. Stevens said that the short term outlook for the textile industry indicates continued highly competitive conditions. In the long term, prospects are for improved market conditions and earnings, he reported. Stockholders of the company approved a proposal instructing the board of directors to exercise the company's option to cancel outstanding subscriptions under the company's stock purchase plan, adopted in 1950. All directors of the company were re-elected.

DURHAM, N. C.—Erwin Mills Inc. first quarter net earnings were 45.4 per cent lower and sales declined 11.3 per cent. For the three months ended December 31, 1957, the company reported net profit of $198,432 against $362,669 in the same quarter a year previous. Net sales were $12,342,228 compared with $13,917,687. Profit before taxes was $440,432, against $803,669, while income taxes totalled $242,000, against $441,000. Erwin manufactures sheetings, drills and denim.

NEW YORK, N. Y.—Lower earnings on higher sales were reported by M. Lowenstein & Sons Inc. for the 1957 fiscal year. Net earnings of $3,036,000 were shown on sales of $460,890,000 compared with earnings of $5,665,856 on sales of $440,414,706 in 1956. Per share earnings for 1957 were $1.07 as compared to $1.98 in the previous year. The quarterly dividend was reduced to 20 cents from the previous 25 cents. In his report to the stockholders Leon Lowenstein, chairman of the board, pointed out that the company's plants are running full and the firm has a fairly good backlog of orders. He expressed optimism for the future and noted that the company's physical properties are in first-class competitive condition. Mr. Lowenstein said the company plans to spend about $5 million in 1958 to maintain and further expand its properties.

CALHOUN FALLS, S. C.—Calhoun Mills here, manufacturer of cotton print cloths and a division of Burlington Industries Inc., has a $2,750,000 expansion and improvement program in the blueprint stage. Plans call for modernization of the weave room using 1,084 X-2 looms at a cost of $1,626,000.

GASTONIA, N. C.—Layoff notices have been posted for approximately 400 third-shift workers of Firestone Textiles here, division of Firestone Tire and Rubber Co. The company said the lay-offs were necessary to avoid overstocking of nylon and rayon tire cord. The local plant makes fabric for tire castings. About 100 of the affected workers were moved to first and second-shift spots. The company called the move temporary and said when car builders go back to full production the workers will be recalled. Demand for tires was reported to be off about 20 per cent.

RABUN GAP, GA.—A sizable addition is near completion at Rabun Mills Inc. here, a wholly-owned subsidiary of James Lees & Sons Co., carpet manufacturer. It provides space for the blending of wool and man-made fibers, the dyeing of wool and other fibers and the dyeing of yarns and carpets. Also being constructed is an addition to the water pumping station, a complete filter plant, an addition to the steam power plant and an industrial waste treatment plant. The original tufting mill at Rabun Gap has been in operation for a year, and the company has expressed satisfaction with the progress made to date. The Rabun Gap facility is built on a 295-acre site and when fully completed this year will have complete dyeing facilities as well as fiber blending and carpet tufting operations. It has total floor space of over 200,000 square feet and will employ several hundreds of persons, according to the company.

GREENVILLE, S. C.—Net earnings of $1,130,936 on sales of $40,278,292 were shown by Woodside Mills for the year ended December 28, 1957, compared with net earnings of $1,312,677 on sales of $40,078,408 for the fiscal year ended October 31, 1956. The company's fiscal year has been changed to coincide with the calendar year. The company's earnings include those of the wholly-owned subsidiary, John Preston Warehouse Co. Total current assets of $18,374,214 and liabilities of $9,789,563 were indicated by the company. This compares with 1956 current assets of $11,364,686 and liabilities of $3,759,682. Directors voted the regular 40-cent quarterly dividend payable April 1 to stockholders of record March 20. Woodside produces print cloths, twills and nylon tricot goods.

GREENSBORO, N. C.—Net sales for Cone Mills Corp. were $131½ million in 1957 over 1956 but net income dropped $1 million to $4,426,303. Earnings per share for 1957 were $1.24 as compared with $1.53 per share in 1956. Net sales in 1957 totalled $169,772,792 against $156,181,064 in 1956. Taxes in 1957 amounted to $4,955,000 compared with $6,025,000 for the previous year.

CARTERSVILLE, GA. — Construction has recently been completed on a new 500-square-foot manufacturing addition to Kingston Mills here. The addition will house roving and winding machinery. It also includes an additional shipping dock.

NEW YORK, N. Y.—Estimated consolidated net earnings of $5,342,000 or 90 cents a common share were reported by United Merchants & Manufacturers Inc. for the six months ended December 31. Earnings for the same period in 1956 were

,704,000 or 96 cents a share. Income xes of $3,625,000 were paid in the last x months of 1957 as compared with $4.- 7,000 in the same period in 1956. Share rnings are based on the 5,941,802 shares common stock outstanding on December 1. The company's fiscal year ends June 30.

SHELBY, N. C.—A $90,000 addition to he warehouse of J. P. Stevens & Co. Inc. here has been completed. The addition adjoins the company's Cleveland plant here.

CHESTER, S. C.—Colonel Elliott Springs, president of Springs Cotton Mills, has announced a three-million-dollar plant expansion now under way here will be further expanded even though the company does not need the floor space. Some twenty feet will be added to the end of the new three-story building. Col. Springs said he was unable to "turn a deaf ear to the voices of my friends and neighbors."

GRANITEVILLE, S. C.—Sales for the nine textile plants of the Graniteville Co. here totalled $55,567,000, two per cent below the 1956 sales of $56,855,000. While sales declined dividends increased from $1.70 in 1956 to $1.90 in 1957. In his remarks to the stockholders at the company's annual meeting, President Samuel H. Swint said he thinks it unlikely that the textile industry will ever develop complete immunity to the competitive conditions which has caused so many mills to fail. Mr. Swint expressed dissatisfaction with the two-price system on cotton and voluntary quotas on imports. Cotton must somehow be restored to full membership in a free and uncontrolled market, he asserted. And a reasonable system of quotas, according to Mr. Swint, is the only sound solution to the problem of foreign competition.

GREENSBORO, N. C. — Preliminary plats of about 400 residential lots in the Cone community were submitted recently to the Greensboro (N. C.) Planning Board by Cone Mills Corp., owner of the property. The company plans to offer the houses and lots for sale in the near future. Plans covered nine plats. Pending plats contain about 600 more lots, most of them with houses.

CLIFTON, S. C.—The new 40-000-square-foot textile weaving plant of Clifton Mfg. Co. here, producer of sheetings, drills and print cloth, was recently completed. A cost of $850,000 for construction and equipment was reported by the company. The new plant, the company's sixth, is equipped with 400 Draper X-2 56" looms. The firm's plants now have a reported total of 3,599 looms and 112,296 spindles.

SPARTANBURG, S. C.—The Deering Milliken Research Corp. expects to move from its present leased quarters in Clemson, S. C., to newly constructed facilities here in September. The new one-story building, presently under construction, is expected to cost about $800,000 and will have 80,000 square feet of space.

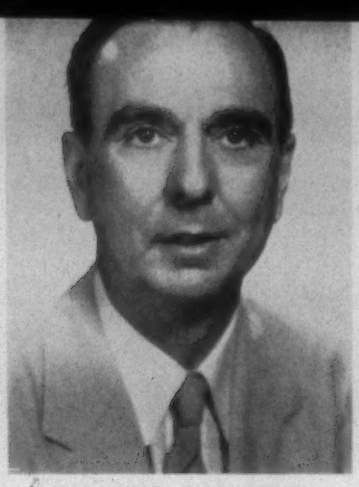
DURHAM, N. C.—The Golden Belt Mfg. Co. will build a new $90,000 office building here. The one-story building will be 80 by 67 feet and will be of masonry construction. The contract calls for it to be ready for occupancy by the middle of August. The structure will replace the present office building which has been in use since the company's founding in 1899. Golden Belt manufacturers cloth bags and print cloth.

GASTONIA, N. C.—F. A. Young Machine Co. here recently completed the installation of NYAF full anti-friction high draft spinning for The Borden Mfg. Co., Goldsboro, N. C., on its entire spinning. Young also reports that it is now installing ten frames of high draft spinning at A. M. Smyre Mfg. Co. here.

DANVILLE, VA.—Dan River Mills Inc. had record sales in the year ended Dec. 28, 1957, as volume reached $164,398,-556, compared with last year's sales of $122,384,371. The corporation also reported an increase in net earnings after taxes. For 1957, net profit was $5,681,766 compared with $5,373,246 for the comparable period in 1956. On a per-share basis, net earnings in 1957, after provision for preferred dividends, were equal to $1.22, off from the $1.42 per share netted in 1956. The per share calculations for 1956 averaged the periods before and after the exchange of shares for companies acquired in 1956. The regular quarterly dividend of 20 cents per share on the common stock and 25 cents per share on the preferred stock was announced. Both dividends are payable April 1, 1958, to holders of record as of March 14, 1958.

W. M. PITTENDREIGH

HORACE PENNINGTON



WALTER VINCENT

JOE N. JENKINS

Southern Textile Association

Announces Divisional Meeting Schedule

SPRING divisional meetings of the Southern Textile Association got under way March 15 at Charlotte with the meeting of the association's Piedmont Division. Some 100 persons attended the meeting, presided over by M. L. Brackett, chairman of the Piedmont Division and general manager of Highland Park Mfg Co., Charlotte, host for the group. Featured speakers included Jim Little of Anderson, Clayton & Co., Atlanta, Ga.; Harvey Sills of Saco-Lowell Shops, Charlotte; and Larry Orr, Whitin Machine Works, Spartanburg, S. C.

In an election of officers, Mr. Brackett was re-elected chairman of the division for the coming year. John Auerhamer, superintendent of the Clinchfield Mfg. Co., Marion, N. C., was named vice-chairman, and John Sherrill, assistant superintendent of Cone Mills Corp.'s Pineville, N. C., plant, was elected secretary.

South Carolina Division

The association's South Carolina Division will hold its Spring meeting on Friday evening, March 28 at the Clinton High School in Clinton, S. C. Featured speakers will include Carl Brandt, research consultant, Whitin Machine Works, Whitinsville, Mass., who will discuss "Details of Drafting"; R. S. Olcott of the research and development center of Armstrong Cork Co., Lancaster, Pa., "Aprons for the Bottom Position of Roth and Duo-Roth Type Frames"; and E. M. Rothermel, director of development, Dayton Rubber Co., Waynesville, N. C., "Development and Progress of Synthetic Drafting Aprons."

In addition to these technical papers, the Draper Corp. will demonstrate the following items on a loom in operation in the Clinton High School Vocational Laboratory: (1) Tru-Tension Let-Off; (2) latest linkage parallel; (3) improved pick motion; (4) flame hardened cam and crankshaft gears; (5) No. 14 shuttle check and other improvements; and (6) samples of Tru-Mold shuttles. Members of Draper's technical staff will be on hand to answer any questions.

An added feature of the South Carolina meeting will be entertainment provided by "Two Dots and A Long Dash," a trio from Greenwood (S. C.) Mills. P. Silas Bailey, president and treasurer of Clinton and Lydia Cotton Mills, will extend welcoming remarks. The meeting will begin at 7:30 p.m. and will be presided over by W. B. Etters, Reeves Brothers Incorporated, Spartanburg, S. C., chairman of the

M. L. BRACKETT

W. B. ETTERS

HORACE BUCHANAN

WORTH KIRKMAN

division. Preceding the technical session will be a light supper beginning at 6:30 p.m.

Northern North Carolina-Virginia Division

The Northern North Carolina-Virginia Division will hold its Spring meeting Saturday morning, April 12, at Mineral Springs High School, Winston-Salem, N. C. S. C. Mayne Jr., Acco Fiber & Spinning Laboratory, Anderson Clayton & Co., Houston, Tex., will be the principal speaker. His topic will be "Cotton Fiber Quality and Current Domestic Mill Requirements."

The program will also feature a number of group discussions. These will include "Quality Control," led by Charles Ward of Highland Cotton Mills, High Point, N. C., and Paul Tucker, assistant superintendent, Erlanger Mills, Lexington, N. C.; "Plain Weaving," James Chandler, vice-president, Arista Mills Co., Winston-Salem; "Box Weaving," Walter D. Vincent, divisional superintendent, Dan River Mills, Danville, Va.; "Slashing," Ralph Going, superintendent of the Sheeting Mill, Fieldcrest Mills Inc., Draper, N. C., Landon Joslin, technical superintendent, Dan River Mills, Danville, and W. A. Kirks, Erwin Mills Inc., Cooleemee, N. C.; "Spooling and Warping," W. M. Kirby, superintendent, Wennonah Cotton Mills Co., Lexington, N. C., Jasper Morgan, overseer of spinning, Erlanger Mills Inc., Lexington, and Frank Nabors, overseer of spinning, Wennonah Cotton Mills Co.; "Spinning," John Houston, superintendent, Spray (N. C.) Cotton Mills; "Carding and Drawing," Ray O'Steen, superintendent of spinning, Washington Mills Co., Mayodan, N. C.; and "Opening and Picking," Sherman Laws, superintendent, Botany Cottons Inc., Jewel Cotton Mills Division, Thomasville, N. C.

H. B. Buchanan, superintendent of Erlanger Mills Inc., chairman of the division, will preside.

Eastern Carolina Division

The association's Eastern Carolina Division has scheduled its Spring meeting for Friday evening, April 18. The meeting will be held at Turnage's Barbecue, Durham, N. C., beginning with a barbecue dinner at 7 p.m. Highlighting the meeting will be an after-dinner address by Dean E. L. Cloyd of North Carolina State College, Raleigh. Another feature of the meeting will be group discussions on carding, spinning, warp preparation and weaving. Worth Kirk-

man of Pilot Mills Co., Raleigh, chairman of the Eastern Carolina Division, will preside.

Golden Anniversary

The Southern Textile Association, which draws its membership from textile operating executives in the Carolinas and Virginia, is currently marking its golden anniversary. Founded in 1908 as the Spray (N. C.) Textile Overseers Association, it is the oldest association of its kind in the industry. Special plans are now being made for its annual convention this coming June 19-21 at The Grove Park Inn in Asheville, N. C.

Horace Pennington, assistant general manager, Cone Mills Corp., Greensboro, N. C., is president of the association. Other officers include W. M. Pittendreigh, director of research and development, Riegel Textile Corp., Ware Shoals, S. C., chairman of the board of governors; W. D. Vincent, divisional superintendent, Dan River Mills, Danville, Va., first vice-president; J. N. Jenkins, The Kendall Co., Cotton Mills Division, Pelzer, S. C., second vice-president; and Jack Kissiah, Clark Publishing Co., Charlotte, secretary-treasurer.

N. C. Textile Foundation Names Officers

R. Dave Hall of Belmont, president of the Belmont Hosiery Mills and an executive in a number of other textile firms, has been named president of the North Carolina Textile Foundation Inc., succeeding J. Harold Lineberger, also of Belmont. The foundation, established in 1942, provides financial support for a wide range of teaching and research functions in the School of Textiles at North Carolina State College. Its total income since its organization now amounts to more than $1,600,000.

Officers elected to serve with President Hall are William H. Barnhardt of Charlotte, vice-president; Halbert M. Jones of Laurinburg, vice-president; A. Alex Shuford of Hickory, treasurer; and C. E. Baxter of Greensboro, secretary and assistant treasurer. Members of the new executive committee include Hall, Lineberger, Shuford, Barnhardt, J. C. Cowan Jr. of Greensboro, Clyde W. Gordon of Burlington, A. G. Myers of Gastonia and W. J. Carter, also of Greensboro. A five-man investment committee composed of Hall, Line-

berger, Shuford, Carter and R. S. Dickson of Charlotte, was named.

The foundation also elected 57 textile executives to its board of directors. They are W. H. Barnhardt, Charlotte; Hyman L. Battle, Rocky Mount; Charles E. Baxter, Greensboro; C. J. Beaver, China Grove; C. A. Cannon, Kannapolis; H. C. Carter, Greensboro; W. J. Carter, Greensboro; Hugh G. Chatham, Elkin; T. W. Church, Charlotte; John W. Clark, Franklinville; C. S. Clegg, Mt. Holly; Ceasar Cone, Greensboro; Sidney Cone, Greensboro; Ivey Cowan, Spindale; J. C. Cowan Jr., Greensboro; Eugene Cross, Marion; R. M. Cushman, Aberdeen; Harry L. Dalton, Philadelphia, Pa.; R. S. Dickson, Charlotte; Louis W. Garrou, Valdese; Robert A. Gilliam, Greensboro; Clyde W. Gordon, Burlington; Romeo H. Guest, Greensboro; R. Dave Hall, Belmont; P. H. Hanes, Winston-Salem; R. M. Hanes, Winston-Salem; Carl R. Harris, Durham; R. L. Harris, Roseboro; J. A. Hendley, Stanley; R. O. Huffman, Morganton; Halbert M. Jones, Laurinburg; B. Everett Jordan, Saxapahaw; Henry A. Lineberger, Belmont; J. Harold Lineberger, Belmont; K. C. Loughlin, Charlotte; J. Spencer Love, Greensboro; J. Franklin McCrary, Asheboro; R. A. Maynard, Burlington; Harold Mercer, Gastonia; J. Ed Millis, High Point; Edwin Morgan, Laurel Hill; Ed A. Morris, Greensboro; A. G. Myers, Gastonia; William Nebel, Charlotte; John M. Reeves, New York, N. Y.; Charles H. Reynolds, Spindale; John C. Roberts, Gastonia; Chester H. Roth, New York, N. Y.; W. H. Ruffin, Durham; A. Alex Shuford, Hickory; Fred L. Smyre, Gastonia; E. M. Spencer, Valdese; Hearne Swink, Kannapolis; K. S. Tanner, Spindale; E. A. Terrell, Charlotte; H. W. Whitcomb, Spray; and Frank C. Williams, Roanoke Rapids.

At its meeting held in the School of Textiles at State College, the foundation heard a talk on progress in the school during the past 12 months by Dr. Malcom E. Campbell, dean of the school. The group also toured the School of Textiles Building.

Market Research Conference Planned

The second Textile Market Research Conference will be held at the Hotel Statler, New York City, May 6-7, according to the National Cotton Council. Specific market opportunities for textiles will be pin-pointed in the sessions. Participants will include representatives of firms producing and processing textile fibers, textile merchandisers, trade associations, chemical suppliers to the textile industry, gov-

ernment agencies and other groups. Progress in the effort to boost sales of textile products also will be reviewed. The first conference sponsored by the cotton council here last year stressed the necessity for improving market research with the objective of aiding the entire industry to better compete for the consumer dollar.

Dan River To Observe August Vacation

Dan River Mills Inc., will shut down its Danville, Va., plants the week beginning August 3 for the traditional Summer vacation, it has been announced by Basil D. Browder, executive vice-president of the local concern. Actual operations will come to a halt at midnight, Saturday, August 2, and will resume beginning with the third shift at midnight, Sunday, August 10.

This is the second year that the company's vacation period has been scheduled for August. Previously, the vacation shutdown had generally coincided with the July 4 holiday. In making the change from July to August last year, it was noted that the July 4 closing had frequently inconvenienced employees and interfered with vacation arrangements largely because so many employees throughout the Southern textile industry and in other industries were on vacation at the same time. It was also noted that with the vacation period scheduled to fall later in the Summer, the company could render better service to some of its customers who normally complete their seasons toward the end of July.

Lyon Scores Government Policies

Fred M. Lyon, president of the Alabama Textile Manufacturers Association has blamed the decline in textile employment in Alabama last year on the government's policies on cotton and on imports. Some 2,900 Alabama textile employees lost their jobs last year. Mr. Lyon warned that unless steps are taken to correct the situation, the downtrend in textile employment may continue.

In a speech to a group of Fayette County farmers gathered to receive the state Community Cotton Award, Mr. Lyon called for a realignment of federal policies. He indicated that the futures of the cotton and the textile industries depend on such action.

"Our government is approaching the point where it must decide whether to abandon an essential industry such as textiles or give it enough protection to insure its life," Mr. Lyon said. "The last is the only sensible and safe course," he added.

Mr. Lyon, president of Opp and Micolas Cotton Mills, scored the government policy on three fronts: Acreage controls—"The present policy has reduced United States cotton acreage from 46 million acres to 14 million acres;" Pricing policies—"The government sells American cotton to foreign consumers for six cents a pound less than it will sell the same cotton to American consumers;" Import controls—"Our country has grown great on the basis of self-sustenance and inner competition, and we see no need to sacrifice an industry so vital as ours to the chopping block of overseas powers."

Mr. Lyon said the federal program has forced up tremendously the consumption of foreign-grown cotton and synthetic fibers while the consumption of American-grown cotton has declined steadily.

He also sugested that the government substantially

increase the cotton acreage immediately, permit cotton to sell at the world price and, in order to permit the orderly marketing of the crop and guard against a catastrophic drop in world price, provide for a loan slightly under the world price at the beginning of each marketing season.

U. S. Rubber Co. Scholarship Awarded

James Robert Howard of Kannapolis, N. C., a senior in the School of Textiles at North Carolina State College, is the winner of the $300 U. S. Rubber Co. Foundation scholarship at the college for the 1957-58 school year. Mr. Howard's selection was announced recently by the college's Scholarship and Student Aid Committee, who said he was unanimously recommended for the scholarship by School of Textiles Scholarship Committee, headed by G. H. Dunlap.

Corp. To Aid Businesses Pushed In S. C.

South Carolina, which ranks well in the lower half of the states in per capita income, is trying to improve that status with the establishment of a business development corporation which would provide financing for the promotion, development and conduct of all kinds of business activity in the state.

A bill providing legislative sanction for the proposal was placed before the House judiciary committee earlier this month. Under the proposal, banks, insurance companies and other financial institutions would be authorized to lend money to the development corporation. The corporation in turn could make loans to sound industrial enterprises.

According to the States Development Board, which has given its full endorsement to the proposal, many companies cannot turn to normal financial sources for needed capital, although the new industries they seek to establish may be perfectly sound business propositions.

Open House Held At N. C. State College

Visitors estimated at more than 2,000 viewed textile products ranging from gauze to elaborate tapestries and observed research functions embracing the latest techniques of science during the annual open house program of the School of Textiles at North Carolina State College Saturday, March 1.

The cavernous Nelson Textile Building was the site of the day-long observance which included fashion shows de-

picting the newest creations of fabric designers, exhibits staged by leading textile manufacturers, and continuous tours revealing current trends in the nation's big textile industry.

The Celanese Corp. of America and the Chemstrand Corp. demonstrated the production of synthetic fibers with both wet and dry spinning units. Seven other industrial firms joined the college in showing production processes ranging from the making of the synthetic fibers through the finishing of woven and knitted cloth.

Displaying a diversity of products were Burlington Industries Inc., Cone Mills Corp., Fieldcrest Mills Inc., Fair Tex Mills Inc., Morgan-Jones Co., Pinehurst Textiles and J. P. Stevens Co. Inc.

Morning and afternoon fashion shows, presented by the Ivey-Taylor Co. of Raleigh, attracted near-capacity audiences to the auditorium of the School of Textiles.

Visitors also got a look at fabrics gathered from throughout the world and displayed in State College's newly-established William H. Harriss Collection of Modern Fabrics, given to the college by Cluett, Peabody & Co. of New York, a textile firm, in honor of William H. Harriss, veteran company official and 1895 graduate of State College. Sponsor of the open house was the Tompkins Textile Council, headed by George Cochran of Maysville, Ky., a senior at the college.

Carolina Association Gives Scholarship

David Allen Powers, a junior in textile manufacturing at the Clemson College School of Textiles, has received a $300 scholarship from the Carolina Yarn Association of Charlotte, N. C., for the current academic year. Mr. Powers is son of Mr. and Mrs. Carl A. Powers of Lamar, S. C., and was an honor graduate of Lamar High School in 1955. His grade point ratio at Clemson is 2.84.

Cotton Consumption Up In January

The U. S. consumption of cotton in January, at 799,800 running bales ran well ahead of the previous month's total of 571,287 bales but below the January 1957 total of 842,452 bales. Consumption for the six months through January was 4,173,308 bales, somewhat below the total of 4,581,260 for the same period in the previous year.

Daily average consumption during January was shown at 31,992 bales against 28,564 in December and 33,698 in January 1957. Stocks on hand at the end of the month reached 13,904,257 bales with 14,171,385 bales reported on hand at the end of December and 16,841,371 bales on hand at the end of January of the previous year.

Consumption of foreign cotton by the U. S. in January was up to 8,208 bales from the December total of 6,449 bales and the January 1957 total of 5,469 bales. Man-made fiber staple consumption was up to 42,390,000 pounds for the month from 30,482,000 pounds in the previous month. The total for January a year ago was 44,195,000 pounds.

Some 99,026 bales of linters were consumed in January as compared with 100,208 in December and 128,414 bales in January 1957. Cotton system spindles in place at the end of the month totalled 21,059 with 19,606 shown as active. At the end of the previous month 21,075 spindles were shown in place with 19,730 active; and in January 1957, 21,564 spindles were shown in place with 20,231 active.

Number Of Spindles In Place Increases

Spindleage statistics, which read like a barometer of the textile industry's condition, have been released by the International Federation of Cotton and Allied Textile Industries. Significantly, the figures show that spindleage expansion continued in Asia and decreases continued in North America and Europe.

In place in the world's spinning mills on July 31, 1957, were 129,422,000 spindles, an increase of 551,000 over the previous year. Communist China lead the field in increases with about a million and a quarter more spindles in place than in 1956, making a total of 7,500,000 spindles in place in 1957. The U. S. showed a loss in spindles of about 700,000, leaving some 21,196,000 in place.

The greatest drop was shown in the United Kingdom with a decrease of about a million and a half spindles to 22,487,000 spindles in place. Japan showed an increase of about a half a million spindles to a total of 9,018,000. And India had 12,376,000 spindles in place on July 31, an increase of about 300,000.

The world's cotton mills consumed a record 42,438,000 running bales of all kinds of cotton for the year ended July 31, 1957. This compared with a total of 38,937,000 bales in the previous year. Consumption of U. S. cotton increased from 11,552,000 to 14,394,000 bales. Expanded consumption is attributed by the federation to the increased number of spindles and to higher average production per spindle. Increased consumption of U. S. cotton is attributed to the government's policy which offers cotton at a discount to foreign buyers.

Rayon And Acetate Shipments

Shipments of rayon and acetate yarn and staple in February totaled 74,900,000 pounds, a decline of 15 per cent from January and 19 per cent under shipments in February 1957, according to the *Textile Organon,* statistical bulletin of the Textile Economics Bureau Inc. Shipments in February were made up of 73,700,000 pounds to domestic consumers and 1,200,000 pounds for export.

High tenacity rayon filament yarn shipments last month came to 21,100,000 pounds. This compares with 29,200,000 pounds in January and 31,900,000 pounds in February 1957. February deliveries of regular+intermediate tenacity rayon yarn amounted to 11,500,000 pounds or ten per cent under the January level and 7½ per cent below February 1957 shipments. Acetate filament yarn deliveries in February, according to the *Organon,* came to 16,800,000 pounds, a four per cent decline compared to January but five per cent greater than February 1957 shipments. In the staple+tow category, combined shipments of rayon and acetate totaled 25,500,000 pounds, 11 per cent under January shipments and 20 per cent below February 1957.

Imports of rayon staple into the U. S. last December

amounted to 6,280,000 pounds, or seven per cent greater than the 5,865,000 pounds brought into the country in November. West Germany was the major supplier, sending in 2,219,000 pounds or 35½ per cent of the February total. For the full year 1957, rayon staple imports totaled 83,809,000 pounds, a decline of 8½ per cent from the 91,752,000 pounds imported during 1956 and well below the record imports of 171,944,000 pounds imported in 1955. Last year West Germany supplied the largest individual share with 29,205,000 pounds or 35 per cent of the total.

Imports of non-cellulosic man-made staple in December amounted to 118,000 pounds, up from the 93,000 pounds of November. For the full year of 1957, imports of this staple amounted to 660,000 pounds, a notable increase over the 1956 total of 406,000 pounds and the 1955 total of 291,000 pounds. West Germany was the principal supplier in the non-cellulosic category in 1957 with 311,000 pounds or 47 per cent of the annual total.

Woolen And Worsted Fabric Production

Statistics recently released by the U. S. Bureau of Census showed that woolen and worsted fabric production during the fourth quarter of 1957 was 61.5 million finished linear yards, 15 per cent lower than the third quarter 1957 output, and approximately 18 per cent below the comparable period of the previous year.

The output of women's and children's clothing fabrics at 32.1 million finished linear yards was 18 per cent below that of the previous period, and nine per cent below the output of the fourth quarter 1956. Men's and boys' clothing fabric production decreased 12 per cent during the fourth quarter to 25.4 million finished linear yards.

Output of non-apparel fabrics was five per cent above the previous quarter. Production of blanketing increased three per cent to approximately 2.4 million yards. Production of transportation upholstery and other non-apparel fabrics amounted to 1.2 million yards during the fourth quarter of 1957.

World Cotton Consumption Hits New Record

Consumption of cotton by the free world is expected to drop from last season's record of 29.5 million bales, according to the International Cotton Advisory Committee. Increased consumption is expected by the committee in the communist countries.

World consumption of cotton rose to the record peak of about 42 million bales last season. The committee reported that it expects this year's level to be about the same since many countries may have hit a temporary peak in consumption.

The following observations about cotton consumption in specific areas were made by the group: U. S.: the drop in per capita consumption more than offset the population increase; Western Europe: impressive gains because of high level of economic activity and lower raw cotton prices with some leveling off due to overproduction expected in Belgium and Holland; Japan: consumption expected to fall about a quarter of a million bales to 2.6 million bales; India: consumption expected to remain about 4.5 million bales; Brazil, Argentina and Pakistan: consumption may be near a peak and may not show further increases this season; U.S.S.R.: marked increase in consumption of cotton in recent years with further increases expected this season.

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POSITION WANTED AS OVERSEER OF WEAVING. 12 years' experience on all types Draper Looms on filament and spun synthetics, cotton sheetings, print and broadcloths, drills, jeans, sateens, ducks, and novelties. Experience includes Job Training Instructor, Laboratory Technician, Job Methods Engineer, and Weaving Overseer. Excellent references. Textile Engineering Graduate. Reply to Box "F. M. S.," Care Textile Bulletin, P. O. Box 1225, Charlotte 1, N. C.

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